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THE DIVINE PEDIGREE OF MAN

OR

THE TESTIMONY OF EVOLUTION AND PSYCHOLOGY
TO THE FATHERHOOD OF GOD

BY

THOMSON JAY HUDSON, LL.D.

AUTHOR OF "THE LAW OF PSYCHIC PHENOMENA," "A SCIENTIFIC
DEMONSTRATION OF THE FUTURE LIFE,"
ETC.

FIFTH EDITION



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TO MY WIFE

WITHOUT WHOSE LOVING AID, COUNSEL, AND ENCOURAGE-
MENT, THIS BOOK COULD NOT HAVE
BEEN WRITTEN.

PREFACE.

IN attempting to fulfil a task so important, and from a layman's point of view so difficult, as that of outlining a scientific basis of Christian theism, I feel it to be due to my readers that I should state the causes which led me to undertake it, and the principles by which I have been guided in carrying it to a conclusion.

It is scarcely necessary to remark that this book was not written for the benefit of those who have already found in Holy Writ sufficient evidence to convince them of the existence of an intelligent Great First Cause. Nor was it written to convince anybody of the soundness of the theory of organic evolution.

It was written for the benefit of that large and constantly enlarging class of men who are imbued with the ultra-scientific dogma that nothing in either physical science or spiritual philosophy is worthy of belief if it is not confirmed by a series of well-authenticated facts, — a congeries of observable natural phenomena. This class of course includes many who are not themselves scientists, but who, having been unable to assimilate the logic of the theologian, pin their faith upon the asseverations of those scien-

tists who claim to have definitely ascertained that there is nothing in man that cannot be dragged to light by means of the surgeon's instruments or the appliances of the chemist's laboratory; or upon the reasoning of those logicians who claim to have discovered, by the process of inductive inquiry, that there is "no logical necessity" for the existence of an intelligent Deity. It was written more especially for the benefit of that large and constantly multiplying class of intelligent students who have become convinced of the substantial correctness of the general theory of organic evolution, many of whom have, at the same time, been led to adopt the atheistic conclusions reached by the great pioneers in that science. Not that all, or even the greater part, of the students of evolution have been thus led astray; for they have not. On the contrary, I think it may be safely assumed that a great majority of educated persons of all religious denominations now recognize evolution as God's method of creation. They have, indeed, not been slow to recognize the fact that the teleological argument has been immensely fortified by the simple facts of organic evolution; and they have been content to ignore the atheistic hypotheses that were at first heralded as necessary elements of the theory of evolution itself. Nevertheless, there are many earnest seekers after truth who are not thus fortified against the specious arguments of atheism; some of whom are prone to accept, at its face value, the gratuitous assumption that the atheistic hypotheses of evolutionists are as well sustained by facts as is the theory of evolution itself. It was to expose this error—this fruit-

ful source of manifold errors — and to show that the facts of evolution are susceptible of no other than a theistic interpretation, that this book was written. In other words, it was written to show that the facts of organic and mental evolution point clearly and unmistakably to a divine origin of mind and life on this earth; and that the atheistic theories of agnostic evolutionists are positively and unqualifiedly destitute of facts to sustain them.

I have, therefore, deemed it best to frame my argument upon purely scientific lines, avoiding speculative philosophy, and adhering strictly to the inductive method of investigation. To that end I have resisted the temptation to strengthen my argument by quotations from Holy Writ; although the Bible is full of pertinent passages which the Biblical scholar will not fail to recognize and apply. I have not even touched upon the teleological argument; although the teleologist will not fail to find an abundance of material for his purpose in the facts presented.

As already intimated, the facts of organic and mental evolution alone form the basis of my argument for theism, *per se*. And when I say that I have accepted those facts as they are set forth by the atheistic evolutionists, the reader will understand that I have not selected my authorities from among those who might be biased in favor of my conclusions. Also, I have accepted their arguments in favor of the general theory of organic evolution; and I have carried those arguments to their logical conclusion. In so doing I have shown that every fact and every argument that sustains the theory of

evolution also proves, with stronger reason, the divine origin of life and mind.

In pursuing my investigations I have adopted the plan of going back to the very beginning of organic life on this planet in search of evidence to prove my thesis. I have done this on the theory that the nearer we approach to the source of anything the more clearly will the nature of the source be revealed in the observable phenomena. When I say that I have not been disappointed in my quest, the reader may understand that I have found in the lowest forms of animal life indubitable evidence of the divine origin of mind and life on this earth. I have also duly considered the other salient facts, phases, and stages of organic evolution, from the monera to man, with the result of finding that the uniform trend is in the same direction.

It is, however, one thing to establish the general doctrine of the divine origin of life and mind, and quite another to sustain the specific doctrine of Christian theism. The one is amply proven by the facts of organic evolution alone; the other requires the aid of psychology.

I have, therefore, given particular attention to the latter science, not only with special reference to its bearing upon Christian theism, but with regard to its bearing upon the general subject of organic evolution. Those readers who are familiar with my former works will readily understand that I refer to the new psychology; that is, to that system of psychology the fundamental principles of which were outlined in "The Law of Psychic Phenomena." In the present work I have simply carried to its legitimate conclu-

sion the fundamental hypothesis set forth in the work above mentioned. I have been moved to do so for many good and sufficient reasons, among which are: (1) The hypothesis has already been demonstrated to be capable of correlating all psychical phenomena, and explaining them on scientific principles. (2) It harmonizes with all the facts of the physical sciences, including those of organic and mental evolution. (3) It is the only hypothesis that furnishes a complete answer to the arguments of materialism in reference to the question of the existence of a soul in man, or of its immortality. (4) And finally, it is the only psychological hypothesis yet promulgated that completely harmonizes all the facts of science with the essential doctrines of the Christian religion.

I have felt constrained, therefore, to make psychology a prominent feature of this book; and in so doing I have attempted to outline the fundamental principles which may manifest the harmony that exists between science and religion. Owing to the limitations of space in a volume like this, I have been compelled to confine myself to the specific subject of Christian theism, leaving much unsaid that bears upon the general subject of Christianity. The purpose of my undertaking will have been accomplished, however, if I have been able to point out to others a method of research which will enable them to carry forward the work that is here begun.

I have no apology to make for the faults of construction and style of this book, other than to say that it may appear that there are undue repetitions, but it will be found that these are necessary to the

continuity of the thought or argument. Some of them are, perhaps, due to the fact that much of the matter has been taken from my lectures and essays on special branches of the subject here treated.

T. J. H.

WASHINGTON, D. C.,

October 10, 1899.

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Part I.

EVOLUTION AND PSYCHOLOGY.

THE DIVINE PEDIGREE OF MAN.

Part I.

EVOLUTION AND PSYCHOLOGY.

INTRODUCTION.

IT is the boast of science that its only quest is truth, and that in its pursuit the inductive method of inquiry is never departed from. So persistently have scientists iterated and reiterated this declaration, and so abundant are the evidences that they have in the main adhered to it, that the uncritical world is wont to accept as truth whatever bears the scientific label, and as valid whatever conclusions are alleged to have been reached by the process of induction. Nor can it be denied that the constantly multiplying scientific appliances of modern civilization afford indubitable evidences of the value, not to say the infallibility, of the Baconian methods of research in the realm of physical science. The marvellous success of the inductive method of searching for truth in the material world not unnaturally gave rise to the broad declaration, by the materialistic scientists, that no theory of causation, spiritual or physical, is worthy of serious consideration unless

it be sustained by a series of well-authenticated facts that can bear no other possible interpretation. This was the prevailing idea among skeptical scientists and their followers when Darwin propounded the theory that the organic world owed its existence to progressive development and inheritance from the lower forms of animal life.

With what alacrity this theory was accepted by the skeptical scientists, and how thoroughly it was reprobated by the theological world, are matters of history. The reasons for the acceptance on the one hand and the rejection on the other were, of course, identical. The theory, if true, disproved the then prevailing theological dogma of special, miraculous creations of species in the organic world:

It was here that the first great, fundamental error was committed by both sides. On the part of the atheistic scientists it consisted in the assumption that, by disproving the doctrine of special creations, they had eliminated God from the universe; or, to use the language of Romanes, they had thereby obviated the "logical necessity for a God." On the part of the theologians the mistake consisted in accepting the conclusion as a valid deduction from the premise; thus rendering it logically necessary for them to denounce the doctrine of evolution itself. For the time being no one seemed to regard any middle ground as logically possible; and the breach between science and religion seemed wider than ever.

After a few years had elapsed, however, the most liberal-minded, intelligent, and unprejudiced of both sides began to realize that it did not necessarily

follow that, if the theory of evolution was the true explanation of organic life, it obviated the logical necessity for an intelligent Great First Cause of all things. On the contrary, as the true theory of organic evolution came to be better understood by its early enemies, and their first crude and ridiculous conceptions of it were dissipated by a knowledge of its real scope and significance, it became more and more evident that evolution is simply God's method of creation. With this clearer understanding of the subject came higher conceptions of the true nature and character of the Divine Mind than had ever before prevailed. God was seen to be a being of infinite intelligence and power, and capable of creating and governing this universe by means of his own immutable laws. In a word, the teleological argument, or the argument from evidences of intelligent design, was strongly reinforced by the facts of organic evolution. In point of fact, it was found that the teleological evidences afforded by evolution far outweigh in real significance all that were ever before adduced.

This, however, is by no means the most important part of the evidences for theism to be found in the facts of organic evolution. It is, in fact, no part of the object of this volume to press the teleological argument; although abundant facts will be developed suggestive of teleological conclusions, which the intelligent reader will draw for himself. My object is to show that the facts of organic evolution afford abundant material from which to study the subject of theism by the pure process of induction, leaving nothing to the imagination, nothing to

speculative philosophy. That is to say, I shall undertake to show that the salient facts of evolution, as developed by the researches of anti-theistic scientists, are susceptible of no other than a theistic interpretation, without an utter abandonment and repudiation of every principle of logical, scientific inductive investigation. To that end I shall undertake to prove that they have avoided a theistic interpretation of their own facts, only by abandoning, at all the crucial points in their inquiry, the plainest principles of induction, and soaring away into the cloudy realms of speculative philosophy without one fact, or semblance of a fact, to sustain their hypotheses.

I shall show, for instance, that Mr. Darwin's great principle of "natural selection," when considered as "the *origin* of species," is, in that sense, without a fact to sustain it. Natural selection, or survival of the fittest, is a potent factor in the process of organic development, and no theory of evolution could be complete without it. But it is preservative of species, — not creative. I shall sustain this view by the opinions of such scientists as Huxley, and I shall demonstrate it by facts presented by such evolutionists as Haeckel. Mr. Darwin has presented a formidable array of facts to demonstrate the correctness of his fundamental theory of organic evolution, and no unprejudiced person can deny that he has abundantly sustained that theory. He has also cited a great number of facts which he assumes to have a bearing upon his subsidiary hypothesis. Nevertheless, it is true that he has not cited one case where anything more than a *morphological* species

has been produced, either by natural or artificial selection. In this sense, therefore, his theory that natural selection is the origin of species must be relegated to the domain of speculative philosophy without facts to sustain it,—the very opposite of induction. I shall venture to infer that his strenuous insistence upon that theory may have been due to one or both of two causes. One of these was his hostility to Lamarck and his theory of “appetency” as the cause of structural changes in organic life; and the other, his desire to sustain the atheistic theory that physical organism antedates, and is the cause of, life and mind.

In reference to these questions I shall undertake to show that Lamarck’s or some cognate theory is necessary in order to constitute a complete, coherent theory of organic evolution. That is to say, no theory of evolution can be complete, in the sense of accounting for all the facts, if either Lamarck or Darwin is left out. For that reason I shall go back, with Haeckel, to the beginning of organic life on this planet, and prove that mind antedates and is the cause of physical, structural organism. As these crucial facts can be demonstrated at the beginning of organic life; and are not so easily proven at any other stage of evolutionary development, I shall claim the right to hold that they are typical examples showing the cause of structural changes in physical organism at all subsequent stages of organic development. I shall lay particular stress upon the foregoing considerations because of their important bearing upon the question of the origin of life on this planet.

The latter is the great question which it is the prime object of this book to discuss. Two theories are to be considered, and each will be treated with special reference to the facts of organic evolution. The atheistic theory will first be considered, for the reason that it is more easily disposed of than the other, owing to the acknowledged absence of facts to sustain it. It constitutes, in fact, another striking illustration of the alacrity with which atheistic scientists will abandon the inductive processes of investigation whenever the facts are against them.

The atheistic theory is that life and mind originated on this earth by "spontaneous generation" from inorganic matter. That is the theory, and that is all there is of it. That is to say, its ablest advocates acknowledge that no fact has ever yet been brought to light tending to prove that such a thing is possible; on the contrary, their greatest scientists have spent years in patient and persevering efforts to cause the faintest sign of life to be generated from inorganic matter; and each one has been compelled to acknowledge his utter failure.

In a word, I shall show by these facts, with others equally significant, that not only have atheistic scientists abandoned and tacitly repudiated the inductive method at every crucial point in their investigations, but that all that there is of atheism in evolution consists of pure assumption, not only without facts to sustain the assumptions, but in direct contravention of all the facts of nature and of experimental science.

The theory of the theistic evolutionist is that evolution is God's method of creation; that life and mind on this earth had their origin in an antecedent

divine mind, — an omnipresent mind-energy, — omnipotent and omniscient; that this divine, intelligent energy operates, not in contravention of law, not by miraculous interventions, not by special creations, but in pursuance of its own immutable laws, instituted from the beginning; and that, consequently, the first mind-energy that appeared on this earth was an emanation, in the natural order of events, from the Divine Intelligence.

In undertaking to establish the essential truth of this hypothesis I shall be guided solely by the acknowledged facts of organic and mental evolution. In other words, I shall adhere to the inductive method, pure and simple.

In pursuing the investigation I shall again go back to the beginning of organic life, for the obvious reason that the nearer we approach to the source of anything, the more clearly will the essential nature of that source be made manifest; and for the further reason that no one else, so far as I am aware, has given adequate attention to the wonderful significance, from a theistic point of view, of the phenomena of life and mind as exhibited in the lowest form of animal life. It must suffice in this connection to say that the ingenuity of man could not devise a more complete array of evidential facts demonstrative of the divine origin of mind in protoplasm and its potentialities through evolutionary development, than is found in the monera.

Evolutionists tell us that the potentialities of manhood reside in that lowest animal organism. If man descended from that organism, the proposition is necessarily true; and I shall demonstrate its truth

by indubitable evidences that atheism has not considered. In doing so, I shall prove more clearly that the moneron derived its mind and life from God than atheists have proven that man descended from the moneron. In other words, I shall demonstrate the truth of their evolutionary hypothesis by disproving their atheistic conclusions. I shall not only prove that the potentialities of manhood reside in the moneron, but that the essential attributes of omniscience there exist in embryo. Moreover, I shall prove by their own showing that, differing only in degree, the moneron is endowed with the creative energy of omnipotence; that to that energy are due all the structural changes that mark the steps in the process of organic evolution; and that all human progressive development, from savagery to the highest possible altruistic civilization, is due to the normal development of faculties existing potentially in the moneron.

In the further argument of the question I shall not only be guided by the facts set forth by the great lights of evolutionary science, but I shall avail myself of their arguments as well. That is to say, the leading arguments employed by them to prove the theory of evolution will be carried to their logical conclusions and shown to be the strongest possible arguments in support of theism. For instance, the argument based upon the law of heredity, which is the chief corner-stone in the evolutionary edifice, when carried to its legitimate conclusion will be seen to demonstrate the logical necessity of a mind, antecedent to the moneron, possessing powers identical in kind with those actually or potentially existent in

the moneron and its descendants. Any other conclusion involves the logical necessity of presupposing a break in the line of hereditary descent, an exception to a law of nature, a godlike mind without an ancestral intelligence, an effect without an adequate cause.

Again, I shall accept their analogical argument from ontogeny, which is the history of the evolution of individual organisms, to phylogeny, which is the history of the evolution of organic tribes. Human ontogeny, being an exact repetition of all the salient features of human phylogeny, constitutes one of the most conclusive arguments in support of the theory of organic evolution. Both ontogeny and phylogeny begin with an undifferentiated cell of protoplasm, and in both cases that cell culminates in man. But if the analogy be carried to its legitimate and logically necessary conclusion, it necessitates an ancestral mind for the moneron as well as for the germinal cell of man, and for precisely the same reasons. Certainly the analogy is incomplete without it, and no scientist will deny the proposition that science has never yet discovered any process by which faculties have been acquired, either in ontogeny or phylogeny, except by inheritance. The atheistic evolutionist, therefore, cannot avoid the conclusion that the moneron inherited its powers, actual and potential, from a divine ancestry, without repudiating his own logic, ignoring his own facts, and abandoning the inductive method of scientific research. All this he deliberately does when he seeks, in the theory of spontaneous generation from inorganic chemical compounds, to account for the

divine potentialities resident in the mind of the moneron.

When these arguments are fully stated and understood, they will not only be found to establish clearly the theory of the divine origin of life and mind on this earth, but, at the same time, to confirm fully the Christian doctrine of the divine pedigree of man. Having clearly proven the latter hypothesis, I shall then venture to reverse the process of inquiry, by taking man as the basis and reasoning back to his divine origin, with a view of finding what conceptions of divine attributes are derivable from our knowledge of the faculties possessed by man. In classifying the latter I shall be guided by the principles of, and facts developed by, the new psychology. By this I mean the hypothesis of duality of mind, as set forth in my published works.¹ I shall, therefore, analyze the faculties of the subjective mind of man, as they have been revealed to the scientific world by means of experimental psychology, and show that those faculties, by simple enlargement and extension to infinity, would become the highest conceivable attributes of an omniscient, omnipotent, omnipresent God of infinite and universal love,—the God of Christian hope and faith. In other words, I shall prove inductively that the soul of man is “made in the image of God.” Not morphologically or anthropologically is man made in the image of his Divine Father, but psychologically. The charge of anthropomorphism will not lie against this conception of God and his attributes;

¹ “The Law of Psychic Phenomena” and “A Scientific Demonstration of the Future Life.”

for the trend of the argument will be, not to show that God is infinitely human, but to prove that man is potentially divine.

In short, the conception of the Deity derivable from the facts of evolution and psychology is of *divine immanence without pantheism, and of personality without anthropomorphism.*

Before proceeding to the consideration of the scientific aspects of the question, I shall devote one chapter to that phase of atheism which has been designated as "agnosticism," with a view of showing that the principles upon which the latter cult base their conclusions make a *prima facie* case in favor of the religion which they repudiate.

CHAPTER I.

AGNOSTICISM.

Definition of "Agnosticism." — Aggressive Ignorance. — Mr. Herbert Spencer's "First Principles." — His Charitable Effort to harmonize Religion and Science. — His "Great Unknowable." — His Numerous "Unthinkables." — His *Petitio Principii*. — His Dogmatism. — His Statement of Fundamental Propositions. — His Lane and Impotent Conclusions. — His "Basis of Reconciliation." — It is simply a Wholesale Acknowledgment of Ignorance. — It strikes at the very Root of Christian Faith. — It invites Imbecile Acquiescence in Agnosticism instead of Scientific Investigation of Theism. — Mr. Spencer's "First Principles" Re-examined. — A Legitimate Conclusion Sought for. — The Conditions Requisite. — The Fundamental Harmony of all Religions. — No Real Conflict between Religion and Science. — It is between Science and Man-made Theological Dogmas. — True Science is True Religion's Best Friend. — True Science is promotive of the Highest Conceptions of, and the most Exalted Reverence for, the God of Christian Faith. — Science is Promotive of all Truth. — There are not two Antagonistic Orders of Truth. — Truth the only Basis of Reconciliation between Religion and Science. — Science furnishes the Data for the Inductive Study of Religion.

AGNOSTICISM is generally supposed to imply an acknowledgment of ignorance of supermundane agencies and conditions. It is apparent, however, that the agnosticism of science, as exemplified by those great scientists whose attitude in relation to current religious beliefs necessitated the coinage of a new word to express it, can be best defined as *aggressive ignorance*. An "agnostic," as exemplified by such scientists, is one who presumes to define the limits of human knowledge, and upon

those limits to erect a barrier against all further inquiry. I need no better illustration than that afforded by the writings of Mr. Herbert Spencer, who is acknowledged to be the fairest and most unprejudiced of all that great constellation of intellectual stars whose coruscations have, as never before, illuminated the path of scientific progress.

Mr. Spencer, in his charitable effort to harmonize science and religion,¹ undertakes to mark the boundary line between the "knowable" and the "unknowable," and to inhibit all effort, of either religion or science, to look beyond the limits thus defined. The "unknowable" is the entity which he invites religion and science to unite in worshiping; and his recipe for securing absolute harmony between the worshipers,—the soporific agent, so to speak, by means of which each is to be lulled into that somnolent condition in which distinctions are not observable and opinions are relegated to the domain of "innocuous desuetude,"—his recipe for securing harmony consists in a mutual agreement that neither of the high contracting parties shall affirm or deny anything worth mentioning in relation to the hypothetical entity that may be supposed to sustain a provisional existence on the "unknowable" side of Mr. Spencer's boundary line.

The things which he invites the united hosts of religion and science to ignore are numerous. The most of them are cherished beliefs of the most enlightened men of Christian civilization; but Mr. Spencer disposes of them all with great celerity by a method that is at once unique and effective, simple

¹ See "First Principles," Part I, "The Unknowable."

to the last degree, and easily understood and applied. It consists in the employment of a phrase that Mr. Spencer invented himself, apparently to enable him to establish his "First Principles" by a method as simple as first principles themselves usually are.

"It is unthinkable," is the polemical dynamite bomb with which he demolishes those refractory propositions which refuse to yield to the clumsy weapons of logic. And it cannot be denied that the "potential energy" of that phrase is incalculable. The rapidity with which it has gone into general use among a certain class of philosophers and scientists as a labor-saving substitute for logic and argument, shows that it supplied a long-felt want.

To do Mr. Spencer entire justice, it must be admitted that he never employs it except in cases of emergency. But in building up his "Great Unknowable," he felt compelled to employ the paradoxical method of subtraction; that is to say, he subtracted a large and varied assortment of "unthinkable" attributes from the God of Christian faith, in order to increase the magnitude of an "unthinkable" entity, — an "inconceivable abstraction," which he dogmatically designates as "The Unknowable." I employ the word "dogmatically" with deliberation, for when Mr. Spencer assumes to designate the Great First Cause as "Unknowable," he deliberately begs the question — the vital question — at issue between religion and materialistic science. If he had chosen a more modest term, as, for instance, "Unfathomable," it would have been more befitting the conservatism and caution of true science, and no one would presume to question the implied limitation of finite

intelligence. It is, in fact, not only an unwarranted assumption, — a *petitio principii*, — violative of the “first principles” of logical ratiocination, for Mr. Spencer to employ the term “unknowable” as he employs it; but, as I shall presently show, the assumption is not a legitimate deduction from the fundamental premise of his argument.

In the mean time I wish to further justify my statement regarding the monumental dogmatism of agnosticism, and to show that I am justified in defining it as “aggressive ignorance.” As I have already intimated, the term “unknowable” is in itself the very quintessence of dogmatism, for it is in itself a declaration, not alone of ignorance (agnosticism), but of the impossibility of any one ever knowing anything concerning the Great Abstraction of which Mr. Spencer thinks he is thinking. The most aggressive part of his dogmatism, however, is manifested when, in a mild and roundabout way, to be sure, he denounces religion as “irreligious” when it persists in believing some of his “unthinkable” propositions; and in like manner stigmatizes science as “unscientific” when it presumes to inquire beyond the boundary which separates what Mr. Spencer knows from that which he does not know. In other words, when religion persists in thinking that which Mr. Spencer thinks is unthinkable, it becomes irreligious; and when science tries to find out something that Mr. Spencer thinks is unknowable, it becomes unscientific. Obviously, under the limitations of his environment, Mr. Spencer could inflict no severer punishment upon the respective recalcitrants. We have, then, the spectacle presented to us of the mildest, the gentlest,

and in many respects the greatest, of all the agnostics visiting his severest possible penalties upon those who differ with him in opinion on questions of science and religion. Torquemada could have done no more.

Mr. Spencer's statement of the major premise of his argument affords a striking illustration of the axiom that the man who attempts to wage war against truth invariably places in the hands of his enemy the weapons for its defence.

His proposition, in its simplest form of expression, is that "There is a soul of truth in things erroneous." This axiom he applies to the aggregate of religious beliefs, declaring that this general principle "must lead us to anticipate that the diverse forms of religious belief which have existed and still exist, have all a basis of some ultimate fact. . . . To suppose," he continues, "that these multiform conceptions should be one and all *absolutely* groundless discredits too profoundly that average human intelligence from which all our individual intelligences are inherited.

"This most general reason we shall find enforced by other more special ones. To the presumption that a number of diverse beliefs of the same class have some common foundation in fact, must in this case be added a further presumption derived from the omnipresence of the beliefs. Religious ideas of one kind or other are almost universal. Admitting that in many places there are tribes who have no theory of creation, no word for a deity, no propitiatory acts, no idea of another life, — admitting that only when a certain phase of intelligence is reached do the most rudimentary of such theories make their appearance, — the implication is practically the same. Grant that among all races who have passed a certain

stage of intellectual development there are found vague notions concerning the origin and hidden nature of surrounding things; and there arises the inference that such notions are necessary products of progressing intelligence. Their endless variety serves but to strengthen this conclusion; showing as it does a more or less independent genesis, — showing how, in different places and times, like conditions have led to similar trains of thought, ending in analogous results. That these countless different, and yet allied, phenomena presented by all religions are accidental or factitious, is an untenable supposition. A candid examination of the evidence quite negatives the doctrine maintained by some, that creeds are priestly inventions. . . . Thus the universality of religious ideas, their independent evolution among different primitive races, and their great vitality unite in showing that their source must be deep-seated instead of superficial."

Later on Mr. Spencer alludes to the emotional nature of the religious sentiment as follows: —

"And if the religious sentiment displayed habitually by the majority of mankind, and occasionally aroused even in those seemingly devoid of it, must be classed among human emotions, we cannot rationally ignore it. We are bound to ask its origin and its function. Here is an attribute which, to say the least, has had an enormous influence, — which has played a conspicuous part throughout the entire past as far back as history records, and is at present the life of numerous institutions, the stimulus to perpetual controversies, and the prompter to countless daily actions. Any theory of things which takes no account of this attribute must, then, be extremely defective."

This statement of Mr. Spencer's fundamental premise is seemingly as fair and candid as the exact

language of a great scientist could make it. Here is a statement of a broad fact that every person of intelligence recognizes and must admit. "There is a soul of truth in things erroneous." "There is truth in everything." What could be fairer? What could be more conciliatory? Nay, what could be rarer than the exhibition of such a broad and catholic spirit by a great scientist when dealing with the religious beliefs of all humanity? It serves to establish mutually pleasant relations between Mr. Spencer and his readers, to say the least. It induces in the latter a state of easy confidence,—a condition of "passive receptivity," as the hypnotists say, so that they are prone to accept further "suggestions" without critical examination.

Now, let us for a moment examine Mr. Spencer's liberal proposition with reference to the alleged object of his essay. His avowed purpose is to reconcile religion with science. To that end he sets out in search of an "ultimate religious truth of the highest possible certainty,"—a truth which will not only reconcile science with religion, but "one in which religions in general are at one with each other."

This statement of his purpose, which is substantially in his own language, naturally leads one to believe that Mr. Spencer has undertaken a task in the success of which every human being has the highest possible interest. It is obvious that "an ultimate religious truth of the highest possible certainty" must also be a scientific truth of equal certainty, if true religion and true science are to be reconciled. But the majority of mankind will agree

that the basis of such a reconciliation, if it is to be of any possible value to mankind, must be not only an ultimate truth of the highest possible certainty, but also one of the highest possible value to science and of utility to the world at large in the regulation of human conduct.

This, however, is far from the kind of reconciliation that is the object of Mr. Spencer's ambition.

Now, let us briefly examine this "ultimate religious truth of the highest possible certainty,"—this potent verity that is capable of obliterating the distinctions between fetichism and Christianity, this ultimate scientific truth that is the essence alike of all religions and of all science. We have Mr. Spencer's word for it, that on the religious side it is this: "The Power which the universe manifests to us is utterly inscrutable." On the scientific side, this is the formula: "In its ultimate essence nothing can be known."

Considering first the statement of ultimate "scientific" verity, it must be admitted that it has the oracular ring of a scientific formula. Moreover, it must be conceded that it is a great fact, and a very inconvenient one, by the way, that there are very many things in this world that, to borrow the formula of Lord Dundreary, "no fellow can find out." But *that* great "ultimate truth" was not the original discovery of Mr. Spencer, albeit the pains which he has taken to demonstrate it; and to correlate it with his "ultimate religious truth" would lead one to suppose that he regarded himself as the Columbus of ultimate verity and of human limitations. It cannot be denied, however, that he was the "original

and first" discoverer of the fact that the two formulas are equivalent, nor will any one seek to rob him of the glory due to one who has been able to found a school of religious philosophy upon that assumption.

We may, therefore, concede that, in a limited sense, his scientific formula is a statement of an ultimate scientific truth. But by no stretch of liberality of construction can his so-called "ultimate religious truth" be classed even as a theological dogma, much less as an undisputed and indisputable religious truth. Like his so-called scientific truth, it is simply Mr. Spencer's oracular way of making a statement relating to the supposed limitations of human intelligence.

Moreover, when Mr. Spencer offers, as a basis of universal harmonic relations, the declaration that "the Power which the universe manifests to us is *utterly* inscrutable," he is guilty of that most heinous of all logical offences, — *begging the question*. For that is the very question at issue between the Christian religion and science — or rather between the Christian religion and such scientists as Herbert Spencer. The very essence of Christian belief in God is that man necessarily sustains a natural relationship to his Creator of a most intimate character; and that, therefore, some knowledge of the Great First Cause is not only possible, but inevitable. No Christian has ever denied the inscrutability of "the Power that the universe manifests to us," in the general sense of the term. But that it is *utterly* inscrutable is a doctrine that strikes at the very root of Christian faith, and is an utter repudiation of the life and doctrines of the Great Founder of the Chris-

tian religion. And yet this is just what Mr. Spencer does when he employs the words "*utterly* inscrutable."

His attitude may be summed up in a very few words: —

He starts out professedly in search of the one great, fundamental, "ultimate religious truth" that underlies, and is the vital, constituent element of, all religions, from "fetichism to Christianity." When he finds it and presents it to an expectant world, it is seen that it is not a religious truth at all; that it is not a tenet of any religion on earth; that it is a proposition that has never been considered, either as a fundamental principle or as a constituent element of any religion whatever; but that, on the contrary, it is a proposition that strikes at the very root of every religion worthy of the name; and finally, that it is a statement that is and must be repudiated as the crassest atheism by every Christian denomination. An acceptance of it by the religious and scientific world as a basis of reconciliation, on the terms proposed by Mr. Spencer, would at once arrest all progress in the inductive investigation of the claims of Christianity, and reduce the religious world to a state of hopeless imbecility. For, be it remembered, his prescription enjoins abstention from either affirmation or denial of any doctrine or belief concerning God or his attributes; and this inhibition extends alike to science and religion. His sole religious creed — his recipe for reconciliation — is incarnated, so to speak, in that portentous sentence: "The Power that the universe manifests to us is *utterly* inscrutable."

And this is agnosticism.

The animus of Mr. Spencer's effort must now be apparent. In searching for a formula of reconciliation he carefully avoided the statement of any proposition confirmatory of the beliefs of any religious sect or system that ever existed; and in making his selection he took care to formulate a declaration that is in absolute antagonism to the fundamental doctrines of Christianity.

Furthermore, while no religious sect can indorse Mr. Spencer's creed, still less can it be indorsed by science. For if science stands for anything, it is for truth. It is its province to search for causes of phenomena, proximate and remote. There are doubtless, many scientists who are delighted to be able to formulate their atheistic views in Mr. Spencer's terms; but there are many others whose quest is of inductive proofs of Holy Writ, — who believe that scientific methods of research will yet reveal something of the nature and attributes of the great "Power which the universe manifests to us."

It follows that Mr. Spencer's great scheme for the reconciliation of religion with science has failed, and must forever fail, for the reason that an acceptance of his terms involves the total abandonment of all that either one of them stands for. Science and religion can never be reconciled upon the basis of a negative proposition that is neither religious nor scientific, especially one that is expressly repudiated by both.

Now, to put Mr. Spencer's propositions into common language, the meaning of which can be grasped by common people, they may be stated thus: —

To the religionist he says: There is just one ultimate religious truth of the highest possible certainty that you must admit before your religion can be reconciled with science, and that is that you do not know anything about religion.

To the scientist he says: There is one ultimate scientific verity that you must admit before your science can be reconciled with religion, and that is that you do not know everything about science.

It is now quite obvious why it was that Mr. Spencer's proposed Great Church of the Reconciliation was destined to prove a failure from the start: neither party could conscientiously subscribe to the creed.

Let us now re-examine the fundamental propositions with which Mr. Spencer started out and see if we cannot find a legitimate conclusion. The propositions may be summed up, in Mr. Spencer's words, thus: "In all religions, even the rudest, there lies hidden a fundamental verity," "common to all religions," a "religious truth," in relation to which "all religions are at one with each other," etc. As already pointed out, Mr. Spencer promised to consider this fundamental truth, but carefully avoided doing so. He specifically mentioned one of the most obvious of all the fundamental truths common to all religions, — its emotional nature, — and distinctly promised to consider "its origin and its function;" declaring that "any theory of things which takes no account of this attribute must, then, be extremely defective." He then dismisses that most important attribute of religion by declaring that, as to its origin, it "arose by a process of evolution;" and, as to its

function, it "must be adapted to the requirements of existence," adding, with confessed reluctance, "we are also forced to infer that this feeling is in some way conducive to human welfare."

It seems almost incredible that Mr. Spencer should have thus summarily dismissed the consideration of an attribute of religion which, to use his own words, "has had an enormous influence — which has played a conspicuous part throughout the entire past as far back as history records, and is at present the life of numerous institutions, the stimulus of perpetual controversies, and the prompter of countless daily actions." And yet this is just what he has done, in order to give prominence to his lame and impotent conclusion which has already been discussed.

Now, let us adopt Mr. Spencer's fundamental, or major, premise as our own, and briefly inquire, What is that underlying truth which is common to all religions, from fetichism to Christianity? In doing so, let us employ the inductive process, and consider nothing but the well-recognized facts pertaining to the subject-matter; bearing in mind always that we are discussing the mental phenomena of religious experience, and not the limitations of human intelligence.

Now, this truth, when found, if it is to possess any evidential value for any purpose whatever, must possess certain well-defined characteristics. Amongst these are: —

1. It must correlate all religions that have ever existed, on the well-recognized lines of religious experience.

This is the general proposition. Then, if it is to

possess any evidential value in itself as to its divine origin, or as to its natural adaptation to the requirements of existence, or its capacity to promote human welfare, it must possess certain further characteristics, namely: —

2. It must be an instinctive attribute common to all races of mankind above those of the lowest grade of human intelligence.

3. It must be capable of evolutionary development without change of its essential characteristic.

4. It must, in its every stage of progressive development, be more and more “conducive to human welfare.”

5. It must, in its highest stage of development, be found to be the concomitant of the highest civilization.

6. It must be an attribute that, without change of its essential characteristic, develops in power, if not in intensity, and becomes more and more exalted in its manifestations with every step in the progress of science.

7. And finally, it must be an attribute the implications of which cannot be disproved by scientific induction; but which, on the contrary, attain a higher and higher degree of probability the more strictly and the more directly the processes of inductive reasoning are applied to them.

Now, this attribute which correlates all religions and in which all are at one with each other, consists in the belief, with which each individual is imbued, *in a spiritual being, mightier than himself, but not indifferent to his thoughts and acts, and upon whom he feels a consciousness of dependence.*

It is obvious that this applies alike to the fetich worshipper and the Christian, together with all the intermediate grades and varieties of religious belief. The difference between religions consists in the different conceptions of the nature and attributes of the object of worship, the relations that exist between that being and man, and the emotions and practices which flow from the recognition of such relations.

Now, let us see if this underlying truth answers to the requirements above mentioned.

First, then, it obviously correlates all religions. (2) It must be an instinctive emotion, since it is common to all races of men above a certain grade of intelligence. That there are tribes of savages so low in the scale of being that they have no idea of a deity or of a future life, simply goes to prove that religion is an inevitable outgrowth of progressing intelligence. (3) That it is capable of evolutionary development, and (4) that in its every higher stage of manifestation it is more and more conducive to human welfare, is shown by the fact that (5) in its highest stage of development it is the inseparable accompaniment of the world's highest civilization.

6. The history of the great conflict between science and religion, or more properly between science and ecclesiasticism, demonstrates the progressive character of true religion. There never has been a conflict between science and religion. Science has never waged war upon religion. It has from time to time been forced to disclose the fallacies of various theological dogmas, and a fierce struggle has as often ensued. But whenever theol-

ogy has been forced to yield, religion has always been the gainer; for every greatly advanced step that has ever been taken by science has by just so much enlarged, exalted, and refined man's conceptions of the Deity and his attributes. And no one will deny that, in so far as man's conceptions of the Deity and his attributes have been thus exalted, by just so much have the religious emotions of reverence, love, and worship been justified, increased, and exalted. Science, therefore, in the nineteenth century has, in this sense, continued the work which Jesus began in the first century. For one of the greatest services that Jesus performed for religion and for humanity was his express repudiation of the crude, anthropopathic conceptions of God which had been handed down from the early Jewish prophets. In their place he has given us a conception of God, his attributes, and his relations to man, that has served to intensify, purify, exalt, and justify that instinctive emotion which is the basic attribute of all religions. And science has continued the work by revealing truths which serve to confirm the intuitions of the Master and justify his conclusions. Not that scientists have deliberately set themselves to do this thing; for they have not. On the contrary, each new scientific discovery has been the signal for a shout in chorus that "religion has been destroyed, and God has been eliminated from the universe." But when the tumult subsides it is always found that God still reigns and religion still lives. A man-made dogma may have been shown to be fallacious; but religion is all the stronger for the elimination of an error,

Perhaps it is just as well that scientists have chosen to assume a hostile attitude to religion; for its friends can always rest assured that its survival is due to its vitality and not to any lack of aggressive effort on the part of its enemies.

On the whole, science has been religion's best friend, and the Church is beginning to realize the fact. No intelligent Christian would now be willing to see any one of the great discoveries of modern science eliminated from the world's stock of knowledge, however determinedly his church may have resisted the innovation when it was first promulgated. No Roman Catholic would now consent to a return to the Ptolemaic system of astronomy, although his church fought the Copernican system for more than two hundred years. No Protestant would willingly consent to the elimination of the Newtonian theorem from the world's stock of science, although, as Luther had reviled Copernicus, so did his successors denounce Newton because "he substituted gravity for Providence."¹ No intelligent Christian would now consent to part with his knowledge of geology, notwithstanding the rudeness of his first awakening from the poetic dream of a six-day creation. And so with the law of evolution. There are few Christians among those who have given intelligent attention to the study of the subject, who could be induced to relinquish the lofty conceptions of the nature and attributes of the Deity, growing out of the contemplation of the infinite wisdom and power displayed in the great law of progressive

¹ See White's "Warfare of Science with Theology," Vol. I. pp. 16, 126.

development of organic and spiritual life from the moneron to man. Much less could he be induced to return to his former crude and anthropomorphic conception of God as a being of limited intelligence, who is obliged to supplement his work from time to time in order to develop new ideas or to provide for unexpected emergencies. In a word, the intelligent Christian of to-day has learned that every step in the progress of science, instead of destroying Christianity or weakening its vital force, serves but to confirm its essential doctrines, and to stimulate to their highest expression those emotions of awe, reverence, and worship which are the common attributes of all religions.

7. It now seems evident that the emotion of religious worship possesses a profound psychological and scientific significance. It is instinctive and universal. It becomes stronger with the increasing intelligence of mankind, keeping pace with the progressive development of the other useful faculties of the human mind. It suffers no diminution of vitality by reason of scientific advancement. It finds its highest expression in the most enlightened nations, where it is the life of every benevolent and charitable enterprise, — of every institution for the amelioration of human suffering or for the elevation of mankind. These facts alone constitute *prima facie* proof that the object of worship is a living reality. If it were any other emotion than that of religious worship, no scientist would hesitate to declare that to be the only tenable conclusion. Scientists would point out the impossibility of a faculty without a function, or of love without an existing object of love capable of

reciprocal affection.¹ And they would be logically and scientifically right; for these are psychological axioms. If, therefore, the love of God is not an exception to the rule, that instinctive, omnipresent, universal sentiment which has existed in every unperturbed human soul since the dawn of creation is an inductive verification of the fundamental tenet of every religion.

If experience of the past is a guide to the future, we are now in possession of the key to a solution of the problem of the reconciliation of science with religion. There are but two possible ways by which this desirable consummation can be reached; and as either one of these methods excludes the other, there is but one.

One of these methods is for inductive science to utterly *disprove* the essential doctrines of religion; and the other is for science to *prove* the essential truth of those doctrines beyond the possibility of a rational doubt. That is to say, the proof should at least be so conclusive that science can no longer decide against the claims of religion on *a priori* grounds; so conclusive that the burden of proof will rest upon the opponents of religion, so conclusive that no other hypothesis will account for all the facts.

As we have seen, scientists have already tried the first method and failed. Thus far every induction of modern science has tended to confirm the essential doctrines of the Church. Only the non-essential dogmas of theology have been shaken. It is reason-

¹ For a fuller statement of this argument, see "The Law of Psychic Phenomena," page 408.

able to suppose, therefore, that further inductions will still further confirm the essentials. This supposition is strongly reinforced by two considerations. One is that the study of those inductive sciences that directly or indirectly concern religion has thus far been largely in the hands of those who are either opposed or indifferent to the claims of religion. The other is that the friends of religion have thus far given very inadequate attention to the inductive study of religion itself, and much less of those sciences which have been heralded as the ruthless destroyers of religion. The mistake is obvious; for if there is truth in religion it cannot suffer by being brought into contact with any truth in science. There are not two orders of truth in the universe, one antagonistic to the other. If, therefore, there is truth in science and truth in religion, the more deeply those of science are penetrated the more obvious will be their harmony with religion. It follows that if there is truth in both, science will yet furnish the data for the inductive study of religion. When that day comes, the "reconciliation" will be inaugurated, and religion and science will read the same Bible and study the same text-books of science, and join, in a scientific and practical sense, in "looking through nature up to nature's God."

CHAPTER II.

PSYCHOLOGY.

General Principles of Psychology illustrated by Facts of Evolution.
— "The Law of Psychic Phenomena." — Its Hypothesis sustained by Facts of Evolution. — A Summary of Fundamental Principles. — The Dual Mind. — The Law of Suggestion. — Objective and Subjective Minds differentiated. — Their Powers and their Limitations. — Suggestion defined. — Hypnotism. — Faculties of the Two Minds tabulated. — An Analysis of the Objective Mind. — Its one Faculty Inductive Reason. — Its Defective Memory. — Its Dependence upon Cultivation and Refunctioning — Its Faculties constitute Pure Intellect. — The Mind of Reason and Judgment. — Its Sphere of Activity purely Mundane. — It is the Product of Evolutionary Development — It perishes with the Body. — The Subjective Mind. — It is the Primary Intelligence. — It existed Millions of Years in Animal Life before a Brain was evolved. — It is the Ultimate Intelligence. — Synchronic Action of the Two Minds. — Genius. — The Brain not the Organ of the Subjective Mind. — The Dual Mind normally controlled by the Objective Mind. — The Law of Suggestion its Instrument. — Voluntary and Involuntary Functions. — One by the Objective Mind, the Other by the Subjective. — Exceptions in Deadly Peril. — The Subjective Mind is fitted especially for a Higher Plane of Existence.

BEFORE proceeding with the consideration of the main questions, it will be necessary to lay the foundation by a brief statement of the fundamental principles of psychology, from which some of my conclusions will be derived. It will be seen, in subsequent chapters, that the basic facts of elementary psychology and those of organic evolution are identical; but we will first consider some of the

fundamental principles of psychology as developed by the researches of modern science.

In 1893 I published my first work, entitled "The Law of Psychic Phenomena," in which I tentatively formulated a working hypothesis for the systematic study of all psychological, or, more specifically, psychical phenomena. That hypothesis was the result of more than thirty years of systematic search for an underlying principle, which I had the faith to believe must exist, and which would, when found, correlate all psychical phenomena, and possibly remove them all from the domain of superstition. More than six years have elapsed since the publication of that hypothesis, and as no fact tending to disprove it has yet been brought to my attention, I feel warranted in assuming its correctness, and carrying it to its legitimate conclusions in every field of psychological inquiry.

For a full discussion of the hypothesis and its application to psychological phenomena in general, I must refer the reader to my work above mentioned. It will be necessary, however, to make a brief summary of it here, in order to make my meaning, in other parts of this book, clear to those who are not familiar with my earlier works. The evidences of the correctness of my hypothesis, which were set forth in my two former works,¹ will not be repeated here, except where it becomes necessary for the elucidation of the text; but further evidences will be adduced which will in themselves be conclusive.

¹ "The Law of Psychic Phenomena" and "A Scientific Demonstration of the Future Life."

The first proposition of my hypothesis may be stated as follows:—

Man is endowed with a dual mind.

Stated thus conservatively, the proposition will not be seriously questioned by any student of psychology who has kept pace with the discoveries of modern science. I prefer, however, to state it provisionally, thus:—

Man is endowed with two minds.

I prefer this method of stating the proposition for two reasons: First, because it appears to be true. That is to say, everything happens just as though it were true; and this is all that any scientist pretends to expect in a working hypothesis. Secondly, I prefer it because it admits of clearer treatment, inasmuch as it requires less of roundabout phraseology to express my exact meaning. The conclusions derivable from the proposition are, however, precisely the same, whichever way it is stated. I adhere, therefore, to my usual way of expressing it, and state, as my first proposition, that "Man is endowed with two minds."

I distinguish them by designating one as the objective mind, and the other as the subjective mind.

The objective mind is that of ordinary, waking consciousness. Its media of cognition are the five physical senses. Its highest function is that of reasoning. It is specially adapted to cope with the exigencies of a physical environment. It is the function of the brain; and the brain is the ultimate product of organic evolution. This, it may be remarked parenthetically, is the mind with which materialistic scientists deal when seeking to demon-

strate, by means of the scalpel and other appliances of experimental surgery, that even the soul itself cannot survive the onslaughts of medical science.

The subjective mind is that intelligence which is most familiarly manifested to us when the brain is asleep, or its action is otherwise inhibited, as in dreams, or in spontaneous somnambulism, or in trance or trance-like states and conditions, as in induced somnambulism or hypnotism. Any one who is at all familiar with the phenomena resulting from any of these mental conditions is aware that the most wonderful exhibitions of intellectual activity and power often result. The significant feature of the phenomena is that, other things being equal, the intellectual powers thus displayed bear an exact proportion to the depth of the trance (to use a generic term); or, in other words, the more completely the action of the brain is inhibited the more phenomenal will be the manifestation of intellectual activity.

Thus far I have not travelled outside the range of common observation and experience, especially of professional men. But it must be admitted that these facts alone make a *prima facie* showing of duality of mind. There are thousands of illustrations of the law which amount to demonstrative proof; but they cannot be discussed in this connection. It may be remarked, however, that materialistic scientists themselves have demonstrated, some of them unwittingly, that the brain is not the organ of the subjective mind.¹ In later chapters

¹ See cases cited in "A Scientific Demonstration of the Future Life," chapter xv.

of this book it will be shown that the proposition is demonstrated by the facts of organic and mental evolution.

The second proposition is this: —

The subjective mind is constantly amenable to control by suggestion.

The meaning of this is that the subjective mind involuntarily accepts as veridical the ideas or statements of fact imparted to it. These statements or ideas may be imparted orally by another person, in which case they are called "suggestions;" or they may arise from the education of the individual; in which case they are termed "auto-suggestions." There are no exceptions to this law, although there are some apparent exceptions. But it will invariably be found that the apparent exceptions are the clearest possible illustrations of the absolute universality of the law. A common illustration of the power of oral suggestion by another is witnessed when a hypnotist declares to his endormed subject that he is a third person. The alacrity with which the subject accepts the suggestion, and the marvellous fidelity to nature with which he will personate the character suggested, are among the most striking phenomena of hypnotism. Again, a striking illustration of the force of an auto-suggestion, arising from the education and belief of the subject, is afforded by so-called spirit mediums. They are self-hypnotized psychics, and the suggestion arising from their education and environment is that, when they are in the subjective state, they are controlled by disembodied spirits. This suggestion is accepted, of course, and the supposed spirit is personated with

the same marvellous fidelity to nature that characterizes the performances of the hypnotic subject.

A corollary of the law of suggestion is that—

The subjective mind is incapable of inductive reasoning.

That is to say, it is incapable of instituting an independent inquiry by the process of collecting facts for the purpose of reasoning from them up to a general principle or law. Under the law of suggestion it must obtain its data, or premises, from the objective mind. Besides, it possesses a higher power than that of induction,—a shorter road to essential truth, namely, the power or faculty of intuitive perception. This subject will be more fully treated hereinafter.

The following table exhibits in condensed form the results of a complete analysis of the faculties of the two minds:

<i>Objective Mind.</i>		<i>Subjective Mind.</i>	
Pure Intellect.		1	Instinct or Intuition.
		2	Controlled by Suggestion
	{ Inductive Reasoning.	3	} Limitations.
	{ Deductive Reasoning (Imperfect).	4	
	{ Memory (Imperfect).	5	
	{ Brain Memories of Emotional Experiences.	6	
		7	Telepathic Powers.
		8	Telekinetic Energy.

In undertaking an analysis of the faculties of the two minds, one broad and pregnant fact stands forth in bold relief, and that is that the only faculty which belongs exclusively to the objective mind is that of inductive reasoning. The other objective faculties set down in the list — namely, the power of deductive reasoning and of memory — are the necessary concomitants of induction. The reason is obvious: deduction is a necessary concomitant of induction, for the objective process of reasoning consists in alternate induction and deduction; and memory is an indispensable concomitant of induction, for the obvious reason that the latter presupposes facts to reason from, and memory is the storehouse of facts.

It will be observed that these faculties, the concomitants of induction, are shared by the subjective mind; the difference being largely of degree. That is to say, they are inherent and perfect in the subjective mind; whereas in the objective mind they are exceedingly imperfect, and depend for their degree of development, primarily, upon laborious cultivation; and, secondarily, upon constant refunctioning as a means of keeping them in a state of efficiency.

Other faculties belonging primarily to the subjective mind, e. g., the emotions, are *represented* in the brain. Scientists tell us that every faculty, every emotion, has its specialized cortical area. This is doubtless true; but whether they will ever succeed in correctly locating all the brain centres is another question. Be that as it may, our emotional experiences, as well as all other experiences that rise above the threshold of normal consciousness, are registered in the brain.

That is to say, each conscious experience creates new brain cells, which in the aggregate constitute the brain memories of our experiences. But they are only memories. They are simply stored up facts for the use of the inductive powers. They complete the objective mental organism. The seat of the emotional faculties is, nevertheless, in the subjective mind, where, as we shall see later on, it was located æons before a brain was evolved in the process of organic evolution.

It will thus be seen that the aggregate of the faculties of the objective mind constitutes pure intellect. They are simply the faculties of reason and judgment. They constitute the judicial tribunal of the dual mind. When properly cultivated and developed, they sit in judgment upon every act of our earthly life; they regulate every emotion, they restrain every passion and direct it into legitimate channels. In short, reason is at once the tenure by which man holds his free moral agency, and the power which enables him to train his soul for weal or woe in this world and in the world to come.

It is obvious that the faculties of the objective mind pertain especially and exclusively to a physical environment. It was evolved in response to physical necessities, just as all other natural weapons of offence and defence were evolved in the great "struggle for life." It could be of no possible advantage as a part of the mental equipment of the disembodied soul, which is endowed with the godlike faculty of intuitive perception of that fundamental truth which the objective mind must seek by the slow and tedious processes of inductive inquiry. It should neither surprise nor

alarm us, therefore, when material scientists demonstrate the fact that the objective mind, being the function of the brain, and inherent in that organ, necessarily perishes with the body.

It will, in fact, become apparent, as we proceed, that the subjective mind is the primary intelligence with which all sentient creatures are endowed; for it existed untold millions of years before a brain was developed in the process of organic evolution. It is also the ultimate intelligence of man, for it survives the death of the body,¹ and the consequent extinguishment of the objective mind. The latter, as before remarked, is a product of organic evolution. Like every other physical weapon of offence or defence, it was evolved in response to the necessities of a physical environment. It is specially adapted to such an environment, and to no other. Its powers of inductive reasoning enable man to grope his way through the mazes of an environment of ignorance and uncertainty, and gradually to distinguish between the true and the false in the realm of physical life. In that life it is the most potent agency known to man; for it enables him gradually to acquire a knowledge of some of the laws of the physical universe, and thus ameliorate his physical condition. In the realm of human laws and human government it also finds ample scope for all the powers it can ever possess. But it is of the earth, earthy.

Before closing this brief summary it may be well to remark that, whilst the two minds are each capable of independent action, they often act in perfect synchronism. This accounts for many otherwise

¹ See "A Scientific Demonstration of the Future Life."

inexplicable phenomena, those of genius being the most conspicuous examples. The specific means by which this synchronism is effected, or how it is that the subjective mind exercises its power to inhibit the action of the objective mind, is not at present known. We can only be certain that it possesses that power by observing the phenomena; that of hypnotism alone demonstrating the power of the subjective mind to inhibit the action of the brain. Cerebral anatomists have not yet studied the subject from the standpoint of duality of mind; and hypnotists are not agreed upon the condition of the brain of a hypnotized subject. The old school of hypnotists still adhere to the idea that the brain must necessarily be the instrument through which all intelligence is manifested. As long as scientists adhere to that idea, there never can be any substantial progress made in experimental psychology; for if psychic phenomena teach anything worth knowing, it is that the brain is not the organ of the highest intelligence in man, — the subjective mind, the organized intelligence of the human soul. I repeat, therefore, that the subjective mind is the primary intelligence of all sentient creatures, and the ultimate intelligence of man; whereas the brain is a specialized physical organ of which the objective mind is the function; and it pertains as exclusively to this life as does any other physical organ or function. It controls the subjective mind in all the ordinary affairs of this life — in everything except in matters of conscience and the primary instinct of self-preservation — because it is specially adapted to the exigencies of a physical environ-

ment. This it does by virtue of the law of suggestion. But by virtue of the same law the subjective mind can totally inhibit the action of the brain, just as it can inhibit all sensation in the body. Just how this inhibition is effected it is not my present purpose to inquire. I leave that to the cerebral anatomists, who will some day awaken to the realization that they have a potent intelligence to deal with that is not of the brain. It is probable, however, that the inhibition is effected by the simple process of withdrawing the blood from the brain, as in ordinary sleep. Be that as it may, it is certain that the subjective mind not only possesses that power, but it can assume control over every nerve, muscle, and fibre of the body. Ordinarily it exercises habitual control over the involuntary functions only, leaving the brain in control of the voluntary movements; but in cases of imminent and deadly peril it inhibits the action of the objective or reasoning mind, and seizes upon the whole nervous and muscular system. In such cases feats of almost superhuman strength and agility are performed, pain is inhibited and fear banished, until the crisis is past.¹

Little need be said, in this connection, about the faculties of the subjective mind, as they will be dealt with more at large in subsequent chapters. Their names are indicative of their functions, and all that needs to be said in this connection is that, unlike the objective mind, each one of its faculties and powers is obviously indispensable to the com-

¹ See "The Law of Psychic Phenomena" for a full discussion of this subject.

plete mental equipment of a disembodied spirit. Not one necessary faculty is lacking, and not one faculty is superfluous, and not one faculty belonging exclusively to the subjective mind performs any normal function in the physical life.

CHAPTER III.

PSYCHOLOGY OF MICRO-ORGANISMS.

The General Theory of Evolution. — Too well established to require Full Discussion. — The Pedigree of Man stamped upon his Physical Organism. — The Three Theories of Evolution: Materialistic, Agnostic, and Theistic. — Darwin, Romanes, and Haeckel accepted as Authorities for Facts, not for Theories. — Facts showing Duality of Mind. — The Brain not the Organ of the Subjective Mind. — The Genesis of the Human Soul. — The very Lowest Form of Animal Life. — The Moneron. — An "Organism without Organs" endowed with a Mind. — Quotations from Gates, Binet, and Others. — The "Psychic Life of Micro-Organisms." — Their Habits and Mind Capacity. — Reflex Action discussed. — Not Adequate to account for Phenomena. — All Vital Phenomena Present in Non-Differentiated Cells. — Wonderful Instincts of the *Diffugia*. — Romanes on Instinct. — The Subjective Mind of Man and Animals Identical. — It is the Mind that is inherited from Ancestry, Near and Remote. — Instincts increase with Intelligence. — Primary and Secondary Instincts. — New Ones developed in Game Animals. — Change of Environment develops New Dangers; hence New or Secondary Instincts. — All Instincts Inheritable. — Subjective Mind of Man the Sum of Ancestral Instincts. — It antedated Brain by many Ages. — Brain, therefore, not the Organ of Subjective Mind.

THE general theory of evolution is too thoroughly established to require any defence at this time; and it is too well understood to require a treatise on the subject to enable my readers to understand the full import of what I shall have to say in the following pages. The pedigree of physical man is too plainly stamped upon his physical structure to admit of a rational doubt of his descent, or

ascent, from the lower animals. The steps of that ascent are too clearly defined in the structure of the lower animals to admit of a reasonable doubt that the lowest protoplasmic unicellular organism known to science contained the promise and potentiality of physical manhood. Nor is it, in my opinion, open to a rational doubt that the progressive steps required to evolve man from the lowest form of animal life were the result of an intelligent plan, and not of chance, or of a series of fortuitous circumstances.

There are three well-defined theories of evolution recognized by science and classified as follows:—

1. Materialistic evolution, which denies everything but matter and motion in the evolutionary process.

2. Agnostic evolution, which postulates an unknown and unknowable as the basis and explanation of the process.

3. Theistic evolution, which assumes a God back of all, working out results along the unalterable line of natural law, and by physical forces exclusively.

There is another theory held by some, called the development theory, which assumes the orderly unfolding of the system of the universe under divine guidance, according to a divine plan, and with various divine interpositions or special creations.

These are Standard Dictionary definitions, but they are sufficiently explicit for my present purpose. They are mentioned for the purpose of showing that the theory of evolution which I propose to outline differs essentially from any of the recognized classifications. It comes nearer to the definition above given of "theistic evolution," but differs from

that in not ascribing everything to physical forces exclusively.

My hypothesis pertains exclusively to the evolution of animal life, and the concomitant psychological development, from the monera to man. It assumes a God back of all, working out results along the unalterable line of natural law, but largely by mental or spiritual forces.

I accept the general theory of organic evolution, in all its fulness, as laid down by materialistic scientists, such as Darwin, Haeckel, Romanes, and other great lights; but I shall use their facts, and to some extent their arguments, to demonstrate my psychological theories. That is to say, I shall attempt to show that their facts and their arguments, carried to their legitimate conclusions, demonstrate much more than is dreamed of in their philosophy; that their facts prove just the opposite to their materialistic conclusions, and that, instead of eliminating God from the universe, or relegating him to the domain of the "utterly" unknowable, they substantiate the essential doctrines of Christianity relating to his attributes and his kinship to humanity

The first in order for consideration will be the evidences which the facts of evolution afford, (1) of duality of mind, (2) that the brain is not the organ of the subjective mind, and (3) of the genesis of the human soul.

We will begin with the first appearance of animal life upon this planet. I shall first quote from Haeckel, — first, because he is a recognized authority among material scientists; secondly, because he is

in some respects superior to Darwin, having written later than that great pioneer in the science; thirdly, because Darwin, in later editions of his works, indorses Haeckel; and fourthly, because the latter distinctly repudiates Christianity and the doctrine of a future life. I cannot, therefore, be accused of selecting my authorities from among those who would indorse my views. He says:—

“If we would now undertake the difficult attempt to discover the phylogenetic course of evolution of these twenty-two human ancestral stages from the very commencement of life, and if we venture to lift the dark veil which covers the oldest secrets of the organic history of the earth, we must undoubtedly seek the first beginning of life among those wonderful living beings which, under the name of monera, we have already frequently pointed out as the simplest known organisms. They are, at the same time, the simplest conceivable organisms; for their entire body, in its fully developed and freely moving condition, consists merely of a small piece of structureless primitive slime or plasson, of a small fragment of that extraordinarily important nitrogenous carbon compound, which is now universally esteemed the most important material substratum of all the active phenomena of life.”¹

Again, he says:—

“The monera are the simplest permanent cytods. Their entire body consists of merely soft, structureless plasson. However thoroughly we examine them with the help of the most delicate reagents and the strongest optical instruments, we yet find that all the parts are completely homogeneous. These monera are, therefore, in the strict-

¹ The Evolution of Man, vol. ii. p. 43, Appletons' ed., 1896.

est sense of the word, 'organisms without organs;' or even in a strictly philosophical sense, they might not even be called organisms, since they possess no organs, since they are not composed of various particles. They can only be called organisms, in so far as they are capable of exercising the organic phenomena of life, of nutrition, reproduction, sensation, and movement." ¹

Here, then, we have the very lowest form of animal life, — "an organism without organs;" a simple mass of plasson, minus even the nucleus which belongs to the true cell, and therefore absolutely without physical organs. And yet it is endowed with a mind, — an organized intelligence. The fact that it adapts means to ends constitutes indubitable evidence that it has carried on a mental process. A living creature is a mind organism; for it is mind, and mind alone, that distinguishes the animate from the inanimate. A cell is a living creature. A cell, therefore, possesses a mind.

"Unicellular organisms," says Dr. Gates, "possess all the different forms of activity to be found in the higher animals. Thus the simplest cell can transform food into tissue and other metabolic products; and this is the basis of all the nutritive activities and processes of the higher animals; the cell can move parts of itself and is capable of locomotion; and this is the basis of all movement in the higher animals brought about by bones and muscles. The cell can feel a stimulus and respond, and this is the basis of the sensory faculties of the higher animals; the cell can reproduce itself by segmentation, and this is the basis of reproduction in the higher animals; the cell on dividing inherits the actual

¹ Op. cit., p. 47.

qualities of its parent mass, and this is the basis of heredity ; in short, the cell contains, in simplest form, all of the activities to be found in man.”¹

Binet, in his great work,² corroborates all that Dr. Gates alleges, and demonstrates the mistake of those scientists who hold that all acts of micro-organisms are due to “irritability,” or reflex action. One of the many phenomena mentioned to show the complexity of the psychic life of micro-organisms is “the existence of the power of selection, exercised either in the search for food, or in the manœuvres attending conjugation. The act of selection is a capital phenomenon; we may take it as the characteristic feature of functions pertaining to the nervous system. As Romanes has indeed observed, the power of choice may be regarded as the criterion of psychical faculties.”

In his preface to the American edition of his work, Binet remarks: —

“If the existence of psychological phenomena in lower organisms is denied, it will be *necessary to assume that these phenomena can be superadded in the course of evolution*, in proportion as an organism grows more and more complex. *Nothing could be more inconsistent with the teachings of general physiology*, which shows us that *all vital phenomena are previously present in non-differentiated cells.*” (The italics are mine.)

Binet also quotes a very interesting statement of the observations of Verworn, which reveal the exist-

¹ See “Therapist,” December, 1895.

² The Psychic Life of Micro-Organisms, Open Court Pub. Co., Chicago.

ence of curious instincts among the Rhizopods. The *Diffugia ampulla*, which inhabits a shell formed of particles of sand, emits long pseudopodia which search at the bottom of the water for the materials necessary to construct a new case for the filial organism to which it gives birth by division. The pseudopod, after having touched a particle of sand, contracts, and the grain of sand, adhering to the pseudopod, is seen to pass into the body of the animal. Verworn, instead of grains of sand, placed small fragments of colored glass about the animal; some time afterwards, he noticed a heap of these fragments on the bottom of the shell. He then saw a bunch of protoplasm issue from the shell, representing the new *Diffugia* produced by division. Thereupon the materials collected by the mother-organism — the fragments of colored glass — came forth from the shell and enveloped the body of the new individual in a sheath similar to that encasing the mother. These fragments of glass, loosely inter-joined at first, were now cemented together by a substance secreted by the body of the animal.

“Two facts,” continues Binet, “are to be remarked in this observation: first, the act whereby the *Diffugia* collects the materials for providing the young individual with a case, is an act of preadaptation to an end not present, but remote; this act, therefore, has all the marks of an instinct. Further, the instinct of the *Diffugia* exhibits great precision; for the *Diffugia* not only knows how to distinguish, at the bottom of the water, the materials available for its purpose, but it takes only the quantity of material necessary to enable the young individual to acquire a well-built case; there is never an excess.

"It is interesting to note that the *Diffugia* does not act differently from animals possessing more highly complicated organizations and endowed with differentiated nervous systems, as, for instance, the larvæ of Phryganids which form their sheaths from shells, grains of sand, or minute slivers."¹

I have made these quotations, almost at random, not to exhibit any special order of development, but to show that in the very lowest form of animal life — in the simplest organism known to science, from which man can trace his ancestry, there exists a mind, — a mind of most wonderful complexity, and possessing transcendent powers, — *an instinctive mind*. This is the important point to be observed. It is an instinctive mind, as distinguished from merely reflex action. Romanes, in his great work, "Mind in the Lower Animals," makes this clear distinction between instinct and reflex action: —

"The most important point to observe in the first instance is that instinct involves *mental* operations; for this is the only point that serves to distinguish instinctive from reflex action."²

I have been thus particular in establishing the fact that a mental organism exists in the very lowest forms of animal life, for the reason that I propose to show that this mental organism is the embryonal archetype of the subjective mind in man. That is to say, the subjective mind of man is a direct inheritance from that of the lowest unicellular organism,

¹ Op. cit., Preface.

² This observation is repeated in his "Mental Evolution in Animals," which see, p. 160.

without a change in its essential characteristics save that which is incident to development.

The subjective mind of man, therefore, is identical with the instinctive intelligence of animals, differing only in degree of development and complexity of organism. I wish this fact to be distinctly borne in mind, for not only is it the salient fact in the history of organic and mental evolution, from the moneron to man, but the inevitable conclusions derivable therefrom are literally of infinite importance.

The steps and processes of this development are clearly set forth in the works of such men as Darwin, Romanes, and other great biologists, to whose works the reader is referred for a detailed treatment of the subject. It may be said in general terms, however, that the instinctive intelligence of sentient creatures increases in range and complexity in exact proportion to the evolutionary development of animal life from the lowest to the highest physical organism. That is to say, at each upward step in the phylogenetic series, new instincts are developed to provide for the exigencies of changed environmental relationships. The process is easy to understand.

Instincts are divided by Romanes into two classes, namely, primary and secondary.

Primary instincts are those natural, spontaneous impulses that move animals, without reasoning, experience, or the intervention of objective intelligence, toward the actions that are essential to their existence, preservation, and development.

Secondary instincts are impulses of like character to the above, but were originally intelligent, and by

frequent repetition have become automatic. Such actions, after being performed for a few generations, become as firmly established as the primary instincts, and are then inherited by succeeding generations.

These added or secondary instincts are the results of changed environment. That is to say, whenever new dangers are to be guarded against, or new wants are to be supplied, new instincts are developed. Thus, as Romanes points out, "the development of firearms, together with the development of sporting interests, has given game of all kinds an instinctive knowledge of what constitutes 'safe distance,' as every sportsman can testify."¹ Romanes then quotes from a paper on "Hereditary Instinct" by Andrew Knight, as follows:—

"I have witnessed, within the period above mentioned, of nearly sixty years, a very great change in the habits of the woodcock. In the first part of that time, when it had recently arrived in the autumn it was very tame; it usually chuckled when disturbed, and took only a very short flight. It is now, and has been during many years, comparatively a very wild bird, which generally rises in silence, and takes a comparatively long flight, excited, I conceive, by increased hereditary fear of man."²

It has also been noted by sportsmen that game animals keep pace with the increased range and effectiveness of modern firearms. What was a safe distance fifty years ago is within easy range of modern weapons; but game animals have already learned the limits of

¹ *Mental Evolution in Animals*, p. 197.

² *Phil. Trans.*, 1837, p. 369.

the new range, and consequently "make themselves scarce" within its radius.

These are but samples of the vast number of illustrations of the principle involved; but they serve to show how new instincts are acquired and old ones modified with every change of environment, and with every step forward in the process of evolutionary development of animal life and intelligence. It is easy to see that, in the course of that development from the moneron to man, the mental organism thus developed must have become wonderfully complex, even before man appeared upon the stage of being. And when we remember that man inherited this already complex mental organism, and has since continued to develop it in a constantly increasing ratio, it is easy to understand that a godlike mental organism necessarily resulted; and this we find in the subjective mind of man.

Now, there are two things which must be distinctly borne in mind in this connection: —

The first is that all instincts are transmitted by inheritance from one generation to another from the lowest to the highest physical and mental organism. This is the shibboleth of science. This is especially insisted upon by those scientists who imagine that a demonstration of its truth eliminates God from the universe. I accept their premises, but not their conclusions, as I shall show hereinafter. I accept their premises because they are demonstrably true. I reject their conclusions because they are demonstrably untrue.

It is true that instincts are transmitted by inheritance; and as Darwin, Romanes, and others have

clearly shown, it is true of both primary and secondary instincts. Were it not true of primary instincts, animal life would have become extinct before it passed beyond the primordial germ in the line of development. Were it not true of secondary instincts, progressive development would have been confined within very narrow limits; for it was by that means that the species was enabled to profit by the new experiences of individuals, incident to changing environment. Hence it is that the subjective mind of man represents the sum of all the useful instinctive knowledge possessed by its ancestry, near and remote, beginning with the lowest unicellular organism known to science.

The second proposition which I desire my readers to bear in mind is that this mental organism began its earthly career millions of years before a brain was evolved in the process of organic evolution. In fact, according to the best authorities, the archilithic period, or primordial epoch, which was the age of skull-less animals, consumed considerably more than one-half of all the years that have elapsed since the advent of organic life on this planet. Thus, Haeckel¹ estimates the comparative length of the archilithic epoch as 53.6 per cent of the whole. During this period the lowest vertebrates appeared, but a brain was not evolved until a later epoch.

It will thus be seen that the primary intelligence of sentient life, the instinctive mind, the mental organism that has since developed into that godlike intelligence which we now recognize as the subjective mind of man, existed and performed its functions

¹ *The Evolution of Man*, vol. ii. pp. 11-18.

with unerring prescience, without the aid of a brain structure, for untold millions of years. We have, therefore, the strongest possible *a priori* grounds for assuming that the brain is not now, and never has been, the organ of the subjective mind; and if the *a posteriori* proofs all conspire to confirm that hypothesis, we can safely draw the most momentous conclusions therefrom.

CHAPTER IV.

EVOLUTION AND THE SUBJECTIVE MIND.

The Brain not the Organ of the Subjective Mind. — Proven by its Identity with the Instinctive Minds of Animals. — The Latter proven by its Continuity from Lowest Organisms up to Man. — Continuity proven by Comparative Analysis of Faculties and Functions. — Instinct in Lower Animals Identical with Intuition in Man. — Its Definition. — The Deductive Faculty potentially Perfect in Subjective Minds of Animals as well as Men. — The Emotions are Faculties of the Subjective Minds of Men and Animals alike. — They antedated the Brain. — Objective Mind is Emotionless. — Induction and Concomitant Memories, its only Functions or Faculties. — Telepathy a Power of the Subjective Mind. — It exists potentially in Animals. — Telekinesis a Subjective Power. — It is the Power that enabled Jesus and Peter to walk upon the Water. — It reappears in so-called Spirit Phenomena. — The Mysterious Motility of the Polycystids. — Science cannot explain it under Physical Laws. — All Subjective Powers derived from Lower Animals, beginning with the Unicellular Organisms. — Further Proof by Experimental Surgery. — Scientific Search for a Soul with a Scalpel. — Materialistic Arguments from Cerebral Anatomy disproved. — They have searched in the Wrong Place for the Soul. — The Soul is Immanent in the Body, not Inherent in it. — Proofs from Voluntary and Involuntary Muscles and Functions. — Time Reaction Different in the Two Minds. — Phenomena when Death approaches. — Subjective Mind grows Stronger as Objective Mind grows Weaker. — Strongest Manifestations in the Hour of Death, after Brain has ceased to act. — Death-Bed Scene when Governor Matthews passed away. — The Physician's Testimony. — The Wonderful Power of Suggestion then exhibited. — Proofs from Experimental Hypnotism. — The Phenomena of Amnesia a Crucial Test. — Spontaneous Somnambulism. — Proofs from Phenomena of Dreams.

BEFORE proceeding to recite the facts demonstrative of the proposition that the brain is not the organ of the subjective mind, we must first show

that the instinctive mind of the lower animals is identical with the subjective mind of man. The fact of continuity alone, if it can be shown with reasonable certainty, is presumptive evidence of the truth of the proposition; for it would require a violent stretch of the imagination to conceive the idea that an organized intelligence, once located in a physical structure and performing its functions independently of specialized physical organs, could suddenly change its method and organ of manifestation. At least it would require the strongest kind of affirmative evidence to substantiate the proposition.

Referring now to the table in Chapter II., in which the faculties of the two minds are differentiated, it will be seen that that of intuitive perception heads the list of faculties of the subjective mind. I think no one will dispute the proposition that this faculty in man is identical with what is known in general terms as instinct in the lower animals. It performs the same functions in both, the difference being one of degree and not of kind; and they may, therefore, be defined in the same terms. I define the faculty as follows: —

Instinct, or intuition, is the faculty possessed by each sentient being, in proportion to its development and in harmony with its environment, to perceive or apprehend, antecedent to and independently of reason, experience, or instruction, those laws of nature which pertain to the well-being of the individual and of the species to which it belongs.

Instinct in the lower animals, as every one is aware, is chiefly concerned in the preservation of the life of the individual and the promotion of the welfare of the

species; and as I shall endeavor to show later on, the higher manifestation of the same faculty in man is promotive of the same general object, the difference consisting in its higher aims and ever-broadening altruism. For the present it is sufficient to remark that the objective mind possesses no faculty akin to instinct or intuition. The faculty of inductive reasoning, as we have already seen, is the only distinctive faculty possessed by the objective mind, and that is the very opposite of intuition.

The next faculty on the list is that of deduction, which is potentially perfect in the subjective mind. Innate deduction is the instinctive logic of the subjective mind; and this is as true of the lower animals as it is of man. It is the concomitant of intuition in the subjective mind, and of induction in the objective mind. That is to say, both induction and intuition deal with general laws; the one by the slow and laborious process of gathering facts of experience, and the other by immediate perception, antecedent to experience and independent of reason. Deduction is the faculty which reasons from general laws or principles to all legitimate conclusions; and it is, therefore, the concomitant of both induction and intuition. Induction, depending as it does upon laborious cultivation for whatever degree of efficiency it may possess, is necessarily imperfect; and hence the imperfection of its concomitant faculty, deduction. On the other hand, instinct, or intuition, is potentially perfect, and it is, moreover, inherent in the subjective mind; and hence the potential perfection of the deductive powers of the subjective mind in every phase of its activity, from the lowest to the

highest mental organism, especially when the activity of the brain is totally inhibited.

The next on the list are the emotions. These obviously belong wholly to the subjective mind, since they are a direct inheritance from the lower animals, including, of course, all that existed before a brain was evolved. It is almost superfluous to add, in this connection, that the "animal passions and propensities" thus inherited, when regulated, elevated, and purified by reason and conscience, contain the promise and potency of all that is capable of imparting happiness and joy to the soul of man in this world or the world to come. There is no valid reason for supposing that the objective mind experiences any emotion whatever. Scientists tell us that every emotion, as well as every faculty, has its special cortical area or compartment. This may be, and doubtless is, true; but it does not follow that the emotions, as such, are felt by the objective mind. On the contrary, there is every reason to suppose that the brain merely registers the conscious emotional experiences of the subjective mind. That is to say, new brain cells are created for every conscious experience of the individual, emotional or otherwise, and these cells are the receptacles of brain memories. But they are only memories. The seat of the emotions is, nevertheless, in the subjective mind, where it was located æons before a brain was developed in the process of organic evolution.

The next on the list is telepathy. There are many who hold that telepathy is largely employed by animals to supply their deficiencies in oral means of communication. I have not sufficiently investi-

gated this question to warrant me in expressing a decided opinion whether animals communicate with each other by that means or not. But I have conducted a series of experiments which convince me that, under favorable conditions, man may influence certain domestic animals telepathically in a very marked degree. Be that as it may, certain it is that telepathy is a faculty of the subjective mind of man, and the power must therefore have existed, potentially, in that of his ancestry, near and remote. It is also certain that the objective mind of man possesses no power akin to telepathy.

Of telekinetic energy little need be said in this immediate connection. It is the power of producing motion in ponderable bodies without physical contact or connection. It is that power which is sometimes manifested in so-called spirit phenomena, such as table-lifting, rapping, slate-writing, *et hoc genus omne*. It is that power which is sometimes manifested in the levitation of the body of the psychic. It is that power which enabled Jesus and Peter to walk upon the water. It is manifestly a power of the subjective mind, for no such energy has ever been manifested in the objective mind. There is no evidence clearly demonstrative that it is possessed by any of the animal kingdom lower than man; although certain animals possess a mysterious energy that material science has never been able to account for. For instance, what is that wonderful energy that enables certain birds to fly directly against a strong wind without the slightest visible motion of their wings? Again, what is that mysterious power that enables certain micro-organ-

isms to propel themselves through a liquid in the absence of physical organs of locomotion? Speaking of this subject, Binet¹ has this to say: —

“The Polycystids have a very peculiar manner of moving; the motion is one of perfect translation, uniform and rectilinear; the animal seems to slide all of a piece over the object plate; it can go to the right, to the left, stay its motion and resume it again; it is free in directing its movements. Now, during this movement *nothing can be seen to take place in the body from within or without*. An analogous phenomenon is to be observed in the Diatomes. Some scientists have wished to explain the mysterious motion by translation executed by the Gregarines, as being due to an imperceptible undulation of the sarcode; but if there was any undulation whatever, one ought to observe a correlative movement in the granules inside; now, *this is something that is never seen*.

“Thus there still exists a great deal of obscurity concerning the principles determining motion among the proto-organisms. The theories based upon muscular contraction that have been propounded from observing higher animals, *are by no means sufficient to explain the phenomena of motility among certain Protozoa and Protophytes*.” (The italics are mine.)

Now, I do not undertake to say that the energy thus displayed is identical with telekinesis as manifested in the human organism. But since it is true, as the materialistic scientists tell us, that the potential of manhood resides in the amœbæ; and since it is demonstrably true that man is endowed with telekinetic energy, there is no *a priori* ground for denying its

¹ *Psychic Life of Micro-Organisms*, p. 19.

existence in the amœbæ. We are at least warranted in assuming, provisionally, that theory to be the true one until materialistic science can give us some sort of explanation of the phenomenon on other grounds.

It is not, however, necessary to the validity of our argument to prove that unicellular organisms phenomenally manifest telekinetic energy. Nor do I assume it to be true. It is sufficient to know that man is thus endowed, and that such powers reside in his subjective mental organism. That being true, it follows that the same energy existed potentially in his ancestry, near and remote.

It will thus be seen that indubitable evidence exists in every faculty of the subjective mind, of its derivation from the lower animals, the difference being of degree. That is to say, the function of instinct is the same in man as in the lower animals; for all impulses, desires, or emotions which are promotive of the well-being of the individual or of the species, belong to the domain of instinct or intuition. And this is true whether they are manifested in the lower animals in the impulses of self-preservation and reproduction, or in the noblest acts or impulses of man, when they are promotive of the general welfare of humanity, physically, mentally, morally, or spiritually.

The fact of the continuity of this intelligence being thus established, we have a right to assume that, since it began its career and continued to perform its functions for millions of years independently of a cerebral organism, it continues to perform its functions independently of the mental organism which has its seat in the brain. I repeat, therefore, with added emphasis, that there is no *a priori* ground or reason for suppos-

ing that the brain is the organ of the subjective mind. Now, if we find that all *a posteriori* proofs tend in the same direction we may safely assume the truth of the proposition to be scientifically established.

I will now briefly state a few of the admitted facts bearing upon this question. Fortunately for my purpose, the materialistic scientists have themselves demonstrated the truth of the proposition by the use of the scalpel. Thus, ex-Surgeon-General Hammond, in his presidential address before the New York Neurological Society, showed that certain faculties of the mind do not have their seat in the brain.¹ In his great work on Insanity² he reiterates his declaration, and demonstrates by many original experiments that the brain is not the organ of the instinctive faculties. Among other experiments, he totally eliminated the brains of certain animals, and found that the instinctive functions were performed precisely as before. He quotes many eminent authorities to sustain his position, and explicitly declares that the instinctive faculties do *not* reside in the brain. He declares it as his opinion that they are "seated exclusively in the medulla oblongata, or in the spinal cord, or in both those organs." Now, those faculties which are found not to be located in the brain are, as I have already pointed out, all faculties of the subjective mind.

I am not disposed, however, to agree with Dr. Hammond in his confident statement that those faculties are located "exclusively" in any one organ

¹ See Proceedings of the New York Neurological Society for 1875.

² A Treatise on Insanity in its Medical Relations: Appletons, 1883

of the body, much as I admire him for his genius and his vast learning. That declaration he doubtless made without duly considering all the facts collateral to the subject he was then investigating. Be that as it may, he has succeeded in demonstrating duality of mind by the use of the scalpel; and that is the favorite instrument of the material scientists when they set out in search for the human soul. And they have cut and carved, weighed and measured and chemically analyzed the brains of men, living¹ and dead; and because they failed to find a soul in the brain they dogmatically declare that man has no soul. Dr. Hammond, however, has demonstrated that they have all along been looking for it in the wrong place; but as he was not looking for a soul at the time, he did not recognize it when he discovered it.

Materialistic scientists have succeeded in demonstrating that the objective mind is a function of the brain, and that it is inherent in the brain. They have demonstrated that each faculty or sense has a cortical area, or brain centre, exclusively its own; and that when one of the brain centres is eliminated or paralyzed, the corresponding sense is destroyed. "Thus," they argue, "a part of the mind is forever obliterated; and it follows that when all the brain centres are destroyed the whole mind is obliterated." Their conclusion is, of course, that there can be no such thing as a future life.

Now, there can be no doubt of the correctness of their facts, nor of the soundness of their reasoning, so far as they pertain to the objective mind. And if that were the only mental organism existent in

¹ *Vide* Washington Irving Bishop's taking off.

man, vain would be his hope of a future life. The objective mind is the function of the brain. It is, therefore, inherent in the brain, and necessarily perishes with that organ.

But it does not necessarily follow that the subjective mind is inherent in any one or more organs of the body. On the contrary, all the facts tend to prove that it exists independently of any specialized organ whatever. We have already seen that the monera are without organs; and yet the subjective mind exists in them, and performs its functions just as perfectly, in proportion to its stage of development, as it does in the most highly organized human being. Again, the facts of telekinesis demonstrate the proposition that the subjective mind can exercise complete control over unorganized matter.

These facts are profoundly significant, and point unmistakably to the conclusion that the soul is a self-existent entity and does not inhere in any organ of the body which it inhabits. In other words, the soul is *immanent*, that is, indwelling, in the body, just as God is immanent in the physical universe, but not inherent in it. That is to say, as God does not depend upon the existence of the physical universe for the continuance of his own existence, neither is the existence of the soul dependent upon that of the body.

Upon no other hypothesis can the immortality of the soul be scientifically or logically predicated; and I repeat, therefore, and state it as a scientific proposition, that *the soul is immanent, and not inherent, in the body.*

It follows that the mind of the soul, or subjective mind, does not inhere in any special organ or organs

of the body; although it employs those organs in phenomenally manifesting itself. It seems extremely probable that it pervades every bone, muscle, sinew, fibre, and tissue of the body. Certain it is that it is potentially able to control them all, and this is one of the evidences of its immanence in every part of the body.

It is well known that it habitually controls the involuntary muscles and functions; and that the objective mind, through the brain and the nerve ganglia connected therewith, normally controls the voluntary muscles and functions of the physical organism. The subjective mind has, therefore, normally the greater part of the work to do; for its domain extends from the centre to the circumference,—from the action of the heart to the metabolism of every cell of which the whole body is composed.

Now, a very important and significant fact in this connection is that the functions of the two minds are not mutually interchangeable. Thus, the objective mind cannot, of its own volition, move one purely involuntary muscle. Reciprocity, or joint control, is possible only in the mixed muscles, such as the sphincters and the organs of respiration. But of the purely involuntary muscles the objective mind has no direct, volitional control. On the other hand, the subjective mind can, and often does, take entire control of the whole body, and wields it at its will. This can be brought about experimentally by means of hypnotism. That is to say, when the brain functions are entirely inhibited, the subjective mind can be made to dominate the whole physical system. It almost invariably occurs when the body is in immi-

nent and deadly peril. In such a crisis the objective senses are benumbed, the brain ceases to act, and a condition of anæsthesia supervenes; but, under the control of the subjective mind, the body acts with preternatural rapidity and precision, and feats of strength are performed that would be absolutely impossible under normal conditions.¹ Spontaneous somnambulism furnishes many familiar illustrations of subjective control over both the voluntary and the involuntary muscular and nervous systems.

I have cited these well-known facts for the purpose of showing how much more intimate and pervasive must be the connection between the subjective mind and the body than that which obtains between the objective mind and the body. The one controls the whole body without reference to specialized organs, and the other is limited in its sphere of activity, and depends upon a highly specialized physical organ — the brain — for whatever efficiency it may possess in its limited domain. The subjective mind, as shown in its phylogenetic history, acts with equal efficiency in a highly specialized organism, with the functions of the brain in total abeyance, as in hypnotism; or in a crude physical organism, destitute of a brain, as in the animals of the archilithic epoch, or in animals destitute of any physical organs whatever, as in the monera.

The difference being thus provisionally established, we might reasonably expect to find that the time limit of reaction to peripheral stimuli would be materially decreased during hypnosis. I say we might

¹ For a full discussion of this phenomenon, see "The Law of Psychic Phenomena."

reasonably expect this result, for the reason that when normal conditions prevail, that is, when the objective mind is in control, and a stimulus is applied to an extremity, say the foot, it requires a measurable length of time for the afferent nerves to convey the message to the brain, and then for the efferent nerves to convey a return message to the extremity, suggesting its removal from the source of irritation. It is reasonable to suppose, therefore, that if the subjective mind is in control, and if it pervades the whole body, the message would reach the seat of control in less time than it takes to send a message through one set of nerves from the foot to the brain and to receive a reply from the brain to the foot through another set of nerves.

Accordingly, we find, from the experiments of Professor G. Stanley Hall and others, that the time limit of reaction in a hypnotized subject is decreased nearly one half as compared with that of the same subject in a normal condition. I am not unaware of the fact that Professor James, of Harvard, and some others, have tried the same experiment with negative results. But a negative result possesses no evidential value whatever when it is confronted with positive results such as those of Professor Hall. A thousand unsuccessful experiments prove nothing when they are offset by one successful experiment. I do not, however, regard this difference in the time of reaction as by any means conclusive; but it is a factor in the problem which is entitled to consideration; for it is one of the series of phenomena that we might expect to find, if the hypothesis is correct, that the soul is immanent in the

whole body, and not localized or inherent in any part of it.

Aside from the surgical experiments mentioned, however, some of the strongest proofs of the truth of this hypothesis are found in the phenomena immediately preceding the death of the body and in the phenomena of hypnotism.

When death approaches, we find the observable phenomena to be precisely what we should have a right to expect if it is true that the soul of man is immortal, and that it is therefore immanent, and not inherent, in the body. We also find that the objective mind, on the approach of death, exhibits precisely the phenomena which we should have a right to anticipate if it is true that it is inherent in the brain, and consequently perishes with that organ.

The respective phenomena of the two minds, then exhibited, are simply these:—

The objective mind, in exact proportion to the growing weakness of the physical organism, ceases to perform its functions in perfection; and it is generally, if not always, completely obliterated before final dissolution takes place. Materialistic scientists have taken great pains to demonstrate this fact, because it is demonstrative that the mind (objective) is dependent upon a physical organism for its existence; and as that class of scientists know of no other mind than that of which the brain is the organ, they easily and logically decide that man is not destined to a future life. We may therefore accept their facts, but not their conclusions; although it must be said, in all candor, that

if the brain is the organ of all that constitutes the intelligence of man, their conclusions are legitimate and cannot be successfully refuted.

On the other hand, the phenomenal manifestations of the subjective mind become more and more pronounced as death approaches and the body grows feeble; and its strongest manifestations are made in the very hour of dissolution. This fact is attested by all the records of psychic manifestations, including those of the Society for Psychical Research.¹ Many instances are recorded of most wonderful psychic manifestations, at the hour of death, by persons who had never before possessed any phenomenal psychic power whatever. The publications of the Society for Psychical Research abound in well-authenticated instances where telepathic messages were sent to distant friends, at the hour of death, announcing the event and describing the tragic details.

It is, in fact, the ultimate phenomenal manifestation of the universal law of psychic activity that the more perfectly quiescent the brain becomes the stronger become the manifestations of the subjective mind. This, I repeat, is a universal law, beginning with the lightest stage or degree of hypnotic sleep and ending in ecstasis or in death. In the supreme hour, therefore, after the brain has forever ceased to perform its functions, and the objective mind is totally extinct, there is an interval before the soul takes its final departure in which it shines forth with phenomenal lustre, to give assurance to the world that the death of the body is

¹ See "Phantasms of the Living."

but the birth of the soul into a higher and a more perfect life.

This phenomenon is a part of almost every death-bed scene, although it is comparatively rare that it is so strikingly manifested as to attract attention. It is well known to almost every one who is familiar with the phenomena of death, that, just previous to final dissolution, the mind of the patient suddenly brightens, pain ceases, and other symptoms of convalescence often supervene to such an extent that the friends are filled with renewed hope. The experienced physician knows, however, how illusive are such hopes and how soon they are to be blasted. The psychologist knows that the supreme moment has arrived, that the brain has forever ceased its functions, and that the mind of the immortal part of man has phenomenally demonstrated its potential energy, — its independence of bodily conditions.

One of the most striking exhibitions of this phenomenon that have ever come under my notice was witnessed at the death-bed of ex-Governor Claude Matthews, of Indiana, in 1898; and I cannot more appropriately close this part of my argument than by relating the circumstance.

On August 29, 1898, the morning papers contained the following Associated Press report, which is as concise and intelligent as it is possible to make it; and it is therefore reproduced entire:—

“Wingate, Ind., Aug. 28.—At 6.30 o'clock this morning at the quiet Meharry homestead, where he was taken immediately after his sudden affliction, ex-Gov. Claude Matthews passed away peacefully, surrounded by his wife and all the other members of his immediate family.

"There was prayer service, accompanied by the singing of hymns, at the bedside of the dying ex-Governor. Mrs. Matthews was very much affected, and stated that she would give anything in the world if her husband would manifest by a single word his faith in Jesus. About three o'clock the minister in the course of the services asked the dying man if he believed in Jesus. The answer, as plainly as any one could articulate it, was 'Yes.' The three physicians regarded this answer as remarkable, as all agreed that the particular part of the brain affected by the paralysis was that governing speech, and that the ex-Governor would probably never have talked had he lived. It was the only word he spoke after he was stricken. He immediately lapsed into a profound coma, from which he did not recover before he passed away at 6.30 o'clock."

Immediately upon the publication of this report, I addressed a letter of inquiry to one of the physicians in attendance upon the distinguished patient, Dr. Olin; but as he did not happen to be present at the time the event occurred, he turned the letter over to Dr. F. D. Allhands, who very kindly replied as follows:—

Office of F. D. ALLHANDS, Physician and Surgeon,
WINGATE, IND., Sept. 14, 1898.

DEAR MR. HUDSON, — Your letter was handed to me by Dr. Olin. He was not present at the time of the death of Mr. Matthews. Dr. R. French Stone, of Indianapolis, and I were present. He [Governor Matthews] did speak the word "Yes" *very* distinctly, so as all in the room could hear and understand him. The part of the brain that governs speech was undoubtedly affected; that was the opinion of all the physicians. I see no objection to your using my name.

Yours truly,

F. D. ALLHANDS.

The evidential value of this case can hardly be overestimated if the diagnosis of the physicians was correct; and it is difficult to imagine how they could be mistaken. The hypothesis we have been considering, however, affords an easy explanation of the phenomenon. The cortical area controlling the organs of speech was paralyzed; and in all human probability the whole brain had ceased its functions at the time when the event happened. The subjective mind was, therefore, active and in control. The brain action being inhibited, the subjective mind was amenable to control by suggestion, unhampered by any possible adverse auto-suggestion. Everything, in fact, conspired to bring about the result. The supreme moment in the life of the dying man had arrived. The overwhelming desire of the stricken wife to know if he had faith in Jesus had been expressed. The religious training of his youth had taught him that a confession of trust in Christ was essential to salvation. The clergyman's question, uttered in a tone of solemn earnestness, and addressed directly to the patient, constituted the strongest conceivable suggestion that an answer was not only possible, but was expected. In pursuance of that suggestion the subjective mind of the dying man answered the question.

In doing so, it simply exercised that control over the functions of the body which, as we have already seen, it normally exercises in all cases of emergency, especially when the action of the brain is, from any cause, inhibited.

The most prolific source of evidence of the correctness of the hypothesis, however, is found in the

phenomena of experimental hypnotism, especially that of amnesia subsequent to the induction of a state of profound hypnosis. Every student of the phenomena of cerebral activity is aware that all our normal mental experiences are registered in the brain. That is to say, every thought or experience of normal consciousness produces a corresponding modification of brain cells. New cells are created and old cells are modified, and these constitute the physical receptacles of memories of brain thought and experience. Every hypnotist knows that a profoundly hypnotized subject does not remember what takes place during the time of deep hypnosis, no matter how exciting and impressive may be the scenes in which he has been made to figure in pursuance of the suggestions of the hypnotist. The obvious explanation is that the action of the brain is inhibited during deep hypnosis; and hence there is, and can be, no change in the brain cells to correspond to the thoughts and experiences of the subjective mind.

The phenomena of spontaneous somnambulism are exactly parallel, and the explanation is the same. On the other hand, in a state of partial hypnosis the subject will often remember the details of his subjective thoughts and hallucinations; and the memory will be vivid in exact inverse proportion to the depth of the hypnosis. The phenomena of dreams during natural sleep are precisely the same. We remember those dreams only which come to us when we are just between sleeping and waking—before the brain ceases to act, as we are going to sleep, or after it is partially roused to activity as we are awakening. All

psychologists agree that we are constantly dreaming as we sleep; but the dreams of profound sleep are not registered in the brain, for the simple reason that the action of the brain is then totally inhibited; and, as in all other cases where the objective mind is in abeyance, the subjective mind is correspondingly active.

The foregoing are a few of the many facts and observable phenomena which demonstrate duality of mind, and prove beyond a doubt that the brain is not the organ of the subjective mind. I have felt compelled to dwell upon the subject at some length, because the propositions which the facts substantiate are the basic truths of psychic science. In the next chapter I propose to make a brief statement of what I conceive to be the office and function of the brain as a factor in the grand scheme of evolutionary development of the human soul.

CHAPTER V.

EVOLUTION AND THE OBJECTIVE MIND.

Table showing when Brain was evolved. — Rapidity of Subsequent Evolutionary Progress. — Geometrical Rate of Increase. — The Neptunian Strata. — The Inconceivable Length of Time embraced in Organic History. — Psychological Lessons taught by the Table. — More than One Half the Time elapsed before a Brain appeared on this Earth. — Progress Slow up to that Time. — Development more Rapid in the Next Epoch, but still Slow. — One Third of the Time consumed in the Age of Fishes. — The Following Epoch made still more Rapid Progress, yet about One Ninth of the Time was consumed in the Reptilian Age. — The Age of Mammals occupied but about One Fiftieth of the Whole Time. — The Age of Man but One Two-Hundredth Part. — The Historic Period occupied but an infinitesimally Small Part of One Per Cent of the Whole Time. — The Significance of these Facts. — The Real Function of the Brain in Organic Life. — When did Animals begin to Reason? — The Brain as a Factor in Evolutionary Development. — Its Inductive Powers. — Its Ability to cope with an Environment of Error incident to Organic Life in the Formative Stage. — The Significance of the Intuitive Faculty. — Another Plane of Existence its Apparent Realm of Activity. — Some Fundamental Axioms. — Secondary Instincts. — The Power of Induction in Animals. — Increased Rate of Progressive Development due to that Faculty.

ON the following page will be found a table¹ the data for which I have taken from Haeckel's "Evolution of Man." The first column comprises an estimate of the Neptunian fossiliferous strata of the earth, with reference to their relative sectional

¹ This table contains the substance of three tables to be found in Haeckel's "Evolution of Man," vol. ii. pp. 11, 18, 19. I have grouped them into one for convenience of reference and examination.

thickness (130,000 feet being the approximate thickness of the whole).

TABLE II.

<i>Fossiliferous Strata.</i>	<i>Palæontological Periods.</i>	<i>Per Cent of Time.</i>
	I. Archilithic or Primordial Epoch (Age of Skull-less Animals).	
30,000 ft.	1. Laurentian Period. }	53.6
18,000 ft.	2. Cambrian Period. }	
22,000 ft.	3. Silurian Period. }	
	II. Palæolithic or Primary Epoch (Age of Fishes).	
42,000 ft.	{ 1. Devonian Period. }	32.1
	{ 2. Coal Period. }	
	{ 3. Permian Period. }	
	III. Mesolithic or Secondary Epoch (Age of Reptiles).	
15,000 ft.	{ 1. Triassic Period. }	11.5
	{ 2. Jurassic Period. }	
	{ 3. Chalk Period. }	
	IV. Cænolithic or Tertiary Epoch (Age of Mammals).	
3,000 ft.	{ 1. Eocene Period. }	2.3
	{ 2. Miocene Period. }	
	{ 3. Pliocene Period. }	
Total 130,000 ft.	V. Anthropolithic or Quaternary Epoch (Age of Man).	
	1. Ice Age, Glacial Period. }	0.5
	2. Post-Glacial Period. }	
	3. Period of Culture. }	
		Total 100.0

(The Period of Culture is the Historic Period, or Period of Tradition.)

The second column embraces a systematic survey of the palæontological periods, or greater divisions in the history of the organic earth,

The third column is a statement of the percentages assigned to the relative durations of the five main divisions or epochs, as shown in the other two columns.

Thus the reader has before him, in one view, the salient facts in the history of organic evolution, and the geological data from which the time estimates have been made. That they are both substantially correct is not seriously disputed by competent authority, although no pretence can be made of absolute correctness. It is entirely probable that the grand divisions outlined may lap over each other to a limited extent; but it is impossible that they should do so to such a degree as to invalidate any conclusions that have been, or are likely to be, drawn from them. Thus, it may be that the line between the primordial and the primary epochs does not sharply define the boundary between the invertebrate ancestors of man and those of his more pretentious relatives who can boast of the regulation backbone. Nor is it quite certain whether man did not make his first appearance sometime during the cænolithic epoch. But a few thousand years more or less on either side of the line dividing any two epochs does not count for much when we consider the æons that must have elapsed since the first appearance of organic life upon this planet. The relative duration of the epochs is sufficiently apparent in the thickness of the various Neptunian strata to justify the few conclusions that pertain to the subject under consideration.

There are two primary lessons taught by facts stated in the table that are as obvious as they are

important. The first is that a brain is not necessary either to the sustentation of life or the manifestation of intelligence. Indeed it may be said that more than one half of all the millions of years that have elapsed since organic life appeared upon the earth have been consumed in demonstrating that fact.

The second lesson is that a brain *is* necessary to the rapid development of life and intelligence.

The table of time percentages shows that progress is exactly proportioned to brain development. Thus, the primordial epoch, or age of brainless animals, occupied more than one half of the whole time. That is to say, in the absence of a brain it required 53.6 per cent of the time that has elapsed since the appearance of the monera to develop the animal kingdom up to the lowest of the vertebrata.

The next epoch was the age of fishes; and they being endowed with brains, the rate of development was correspondingly increased. But a little over thirty-two per cent of the time was consumed in developing from them the amphibia and the reptiles. It was a long-drawn-out epoch compared with those that followed, but it was a decided improvement over the one that preceded it. The brains of fishes are not very highly developed or specialized, but the table of percentages shows that they were a decided improvement upon no brains at all. The best evidence of that is that they were capable of development, and this is shown by the fact that the more highly endowed fishes sought fresh fields and pastures new by making occasional incursions upon dry land. From these were developed the amphibia and the whole reptilian race.

The age of reptiles, as shown by the table, consumed but a little over eleven per cent of the time in developing the mammalia.

The mammalian age, in turn, decreased the percentage in a still greater proportion, consuming but a little over two per cent of the whole time in developing up to man.

Lastly, the age of man embraces but one-half per cent of the whole time since organic life appeared upon the earth; and this includes the glacial period and the post-glacial period.

It is obvious that if we should segregate the period of culture, or historic period, from that of prehistoric man, we should find that the percentage of duration of the historic period was but an infinitesimal part of one per cent of the whole.

We are now, in some measure, prepared to appreciate the part which the brain has played in the development of organic and intellectual life on this planet; for we have seen that, since it became a part of the equipment of organic life, it has accelerated the progress of evolutionary development in a geometrical ratio. It has, moreover, changed the original significance of the law of "survival of the fittest." Thus, before a brain was evolved, fitness to survive was wholly a matter of physical strength or development. After the development of the brain, *sagacity* became the most potential factor in the problem of survival; and from the time when the most highly developed fishes began to seek safety in a new environment, by crawling out of their native element and taking refuge upon the dry land (amphibia), until man appeared upon the earth,

sagacity has been a factor of constantly increasing potency in the survival of the fittest. Man is so far advanced in the scale of being that he is comparatively independent of environment, or rather he is able to create his own environment; and physical strength is the least in importance of the factors in the problem of survival.

These, however, are trite sayings and are matters of common observation. What concerns us most, for the purposes of this argument, is the process by which this development was brought about, and the conclusions derivable from a study of that process.

In pursuing this study I hope to find a solution of several problems that have perplexed the scientific mind, among which are the following: —

First, what is the real office and function of the brain in organic life?

Secondly, when do animals begin to exercise the powers of reason?

Thirdly, what is the potential factor in the development of secondary instincts?

In discussing these questions I shall first postulate certain things regarding the functions of the brain, leaving some of their verifying facts to be developed in the discussion of the remaining questions, and referring the reader back to some of the preceding chapters for other proofs of my postulates.

I assume, then, that the brain is simply a physical organ, possessing but one distinctive power or function, namely, the faculty of inductive reasoning. It was evolved in response to the necessities of a physical environment; and the specific office of the intellectual faculty, or mind, of which it is the organ,

is that of a guide to its possessor through the manifold mazes of that environment. This intelligence, which has been denominated the objective mind, apparently does not constitute an integral part of the primary intelligence, or subjective mind, although it often acts in perfect synchronism with it.

As I have already pointed out, the subjective mind, under and by virtue of the law of suggestion, is incapable of independently carrying on the process of induction. It has, however, the faculty of deduction in potential perfection. It must, therefore, take its premises from an extraneous source. The reason for this apparent limitation of mental power will more fully appear as we proceed. In the mean time it must suffice to say that the subjective mind does not appear to have originated on this earthly plane, nor does it appear that this plane of existence is its final goal. Its first manifestation on the earthly plane revealed a far higher power than that of induction, and the world has named it "instinct." Its higher manifestations are called "intuition." As I have already pointed out, they are identical, differing only in degree. It is the power of immediate perception of laws or general principles, and it is antecedent to, and independent of, reason or experience or instruction. Induction is but another method of ascertaining general laws or principles. This it accomplishes by the slow and laborious process of gathering facts of observation or experience. It possesses the faculty of discrimination between what is real and what is apparent, and of estimating the value and pertinency of all the facts of its environment. Hence its adaptation to an imperfect envi-

ronment, such as sentient creatures are compelled to confront in this world,—an environment that is filled with snares and pitfalls, physical and moral, enemies to life and foes to progress; an environment of error, falsehood, and uncertainty; in short, a world that is in a formative state, just emerging from primitive conditions, physical, mental, and moral. Obviously the one mental faculty adapted to cope with the exigencies of such an environment is that of inductive reason,—the faculty of discrimination, the faculty that enables its possessor to arrive at fundamental truth by a process of systematic analysis of facts and appearances,—of proving all things, and holding fast only to that which is good.

The subjective mind does not possess that faculty for the reasons that, as I have before remarked, (1) it apparently had its origin in another and a higher plane of existence; and (2) it is apparently destined, ultimately, to return to its native realm. I shall assume, provisionally, this to be the correct hypothesis, reserving the proofs for their proper places in subsequent chapters of this book. In the mean time it must also be assumed, subject to subsequent verification, that the environment of the ultimate home of the human soul is perfect. That is to say, it is a realm of truth, a realm where no falsehood or false appearances beset the minds of its inhabitants. It is obvious, therefore, that the faculty of induction would be superfluous in a realm where nothing but truth is in evidence. Nevertheless a faculty adapted to such conditions is required; and that faculty we find existent in the subjective mind of man, namely, that of intuition,—the faculty of

immediate apprehension of fundamental truth, antecedent to, and independent of, reason, experience, or instruction.

Now, it is axiomatic that *nature never creates an unnecessary or a superfluous mental faculty*. It follows that the faculty of intuition, since it is limited and circumscribed in this world by the law of suggestion, must reach the full fruition of its powers in some higher plane of existence.¹

It is also axiomatic that *nature never fails to create or evolve such mental faculties as are necessary to adapt sentient creatures to their environment*.

The history of organic and mental evolution amply verifies this proposition. Thus, the primary intelligence amply sufficed for the first stages of development, that is, during practically the whole of the primordial epoch. This, as we have seen, was the age of skull-less animals and seaweed forests. During the whole of this epoch the inhabitants of our planet consisted exclusively of aquatic forms. "At least," says Haeckel, "no remains of terrestrial animals or plants dating from this period have as yet been found. A few remains of land-dwelling organisms which are sometimes referred to the Silurian period, are Devonian." Vegetable life capable of sustaining animal existence had not yet appeared upon the dry land. There was necessarily but little variation in the aquatic environment; and there was nothing, therefore, to facilitate or incite a rapid development of either organic or mental life. As a consequence,

¹ For a full discussion of this particular branch of the subject, see "A Scientific Demonstration of the Future Life." It is incidentally mentioned here to complete the present argument.

the primary instincts being alone developed, the process was slow. Nevertheless, there was progress made, and at the close of the primordial epoch the lowest of the vertebrate ancestors of man appeared and a brain began to be evolved.

It was then that animals began to reason. It was then that the faculty of induction became a potential. It was a long time before it was so far developed as to leave a record of its existence; but the time came at last, and the first phenomenal manifestation of that power that left an impress visible to science was when the most highly endowed fishes began to seek release from their native environment by making incursions upon dry land, and thus gave rise to the amphibian class. It was then that *secondary instincts* began to be developed. That is to say, it was then that "intelligent acts" began to be performed which eventually were "converted into instincts" (Darwin).

Before entering upon the discussion of that branch of the subject, however, let us briefly examine the essential character of the process of induction as it was and is manifested in the lower animals.

Inductive reasoning, as every one knows, when considered as a distinctive faculty or power of the human mind, consists in collecting, classifying, and analyzing the facts of observation and experience, for the purpose of ascertaining the general law or principle underlying the series of facts under consideration. It is the faculty of discrimination. It is the power of adaptation to environment; and this is true whether it is manifested in man or in the lower animals. And it may be set down as axiomatic that, other things being equal, the power of adapta-

tion to environment is exactly proportioned to the development of the faculty of induction. An animal without a brain will perish in a changed environment. Man alone possesses the capacity to adapt himself to the extremes of environmental conditions; for he alone has the power to modify existent conditions or to create new ones for himself. Between these two extremes there exist a thousand grades of adaptive capacity, but, as before remarked, the grade is determined by the development of the faculty of induction.

The simplest way to explain what I mean by induction in the lower animals is to contrast the functions of the objective and subjective minds as they are manifested in all grades of mental capacity.

I have already shown that the subjective mind of man is constantly amenable to control by suggestion. Hypnotists describe the effect upon a hypnotized subject as "monideism." That is to say, the subject is dominated by one idea to the exclusion of all other ideas that are antagonistic to the one embraced in the suggestion that has been made to him. That idea is accepted by his subjective mind as the fundamental law pertaining to the subject-matter of the suggestion; and he proceeds to reason deductively from that supposed fundamental to all the conclusions legitimately derivable therefrom. All other facts, especially those which antagonize the dominant idea or suggestion, are ignored. This is true whether the suggestion is true or false. It is obvious that, if the suggestion is false, the deductions will lead to the grossest error; although they may be perfectly logical in themselves. It is also obvious

that, when the suggestion is true, the prodigious power of correct deduction, which is characteristic of the subjective mind, enables it to grasp and assimilate all that there is of truth deducible from the suggestion. Hence it is that, in an environment of truth, the subjective mind is never led astray; for its power of intuitive perception of the laws of its being and environment always insures truthful suggestions; and its power of potentially inerrant deduction insures correct conclusions.

But the physical world does not afford such an environment; and false suggestions in every conceivable form continually beset every sentient creature. Hence the necessity of investing the animal kingdom with a faculty adapted to such an environment. Hence the evolution of the brain, with its capacity for induction, — its faculty or power of discrimination, its ability to consider more than one fact or appearance at a time and to estimate their respective weights and values. And this is inductive reasoning, whether it is manifested in the scientist, who collects a vast congeries of facts and classifies and weighs them with the intelligence born of culture and experience, or in the animal which is only capable of comprehending two facts at a time and weighing their respective values.

This, then, is the primary distinctive difference between the two minds. The subjective mind considers but one fact or suggestion at a time. It accepts that fact, or that apparent fact, or suggestion of fact, as true, and it acts accordingly. This is what is known to science as the "law of suggestion." On the other hand, the objective mind is capable of con-

sidering two or more facts, or suggestions of fact, and of exercising a discriminating judgment between them. It is the difference between instinct or intuition and induction. In an environment of truth the first is inerrant. In an environment of uncertainty the second becomes necessary. The history of organic evolution shows that whatever was found to be necessary to the conservation of animal life was eventually evolved in response to that necessity. Accordingly, when a supplemental faculty of mind became a necessity, a new physical organ was evolved, the function of which supplied the deficiency and gave to animal life a fresh impulse in the direction of progressive development. The conclusion seems obvious and irresistible that it was when the brain was evolved that animals began to reason, that is, to reason by the process of induction; and that it was due to the development of that faculty, and in exact proportion to that development, that the constantly accelerated ratio of evolutionary progress was due.

CHAPTER VI.

THE PROCESS OF EVOLUTION.

Objective Mind educates the Subjective Mind. — Hence the Instinct of Animals is exactly proportioned to their Intelligence. — Authorities cited. — Progressive Mental Evolution brought about by Development of Secondary Instincts. — Romanes on Primary and Secondary Instincts. — The Latter brought about by “Natural Selection.” — The Absurdity of that Theory illustrated. — The General Theory of Natural Selection accepted with Reservations, but it is overloaded to an Absurd Degree. — Lamarck’s Theory of “Appetency” also accepted with Qualifications. — The Two Theories Complementary. — Further Illustration of the Absurdity of ascribing Primary Instincts to Natural Selection. — A Logical Axiom, “Never needlessly multiply Causes.” — Primary and Secondary Instincts defined. — They accord with the History of Organic Evolution. — New Environmental Conditions reveal New Dangers. — These are at first intelligently overcome. — Habit converts the Acts into Instincts which are then inherited. — Natural Selection not an Original Cause of New Species. — Strictly speaking, it is not a Law of Nature. — “Survival of the Fittest” an Incident, not a Law. — It is an Effect of other Causes. — Natural Selection not the Origin of Species. — Natural Selection is the Theory of Chance. — It is Atheistic in its Last Analysis. — Lamarck’s Theory. — It is a Necessary Factor in any Complete Theory of Evolution. — Structural Changes due to New Instinctive Impulses. — The Latter due to Brain Development. — Brain Development due to constantly Increasing Complexities of Environment. — This is True of Man as of the Lower Animals. — Each Individual Intelligence is the Sum of all Ancestral Instincts plus its Objective Intelligence.

IT will not be disputed that the evidence thus far adduced points clearly to the conclusion that the objective mind — the mind of which the brain is the organ — is a potent agency in the progressive de-

velopment of animal intelligence. It remains to examine the process by which this development has been brought about.

It has already been shown that the objective mind is the educator of the subjective mind. It is fitted for that office by virtue of the fact that its power of inductive reasoning qualifies it to act intelligently in an imperfect environment, for it possesses the faculty of judicial discrimination. In saying this I must not be understood as affirming that the objective mind performs its function of induction to the exclusion of instinct. I am not of those who believe, with Cuvier, that instinct and intelligence stand in an inverse ratio with each other. Darwin, and other modern biologists, agree, with Pouchet, that no such inverse ratio exists. On the contrary, as the latter points out, "those insects which possess the most wonderful instincts are certainly the most intelligent."¹ Again, Darwin² shows that "in the vertebrate series the least intelligent members, namely, fishes and amphibians, do not possess complex instincts; and amongst mammals the animal most remarkable for its instincts, namely, the beaver, is highly intelligent."³ In fact, I do not know of a modern biologist who does not now admit that animals possessing the most complex instincts invariably possess a correspondingly high order of objective intelligence. I make these references for the reason that, as far as they go, they bear me out in what I shall proceed to

¹ *Revue des Deux Mondes*, February, 1870, p. 690.

² *Descent of Man*, p. 67.

³ See also "The American Beaver and his Works," by Morgan, 1868.

show; and that is that complex instincts and intelligence are exactly proportioned to each other in all the broad realm of sentient life, beginning with the animal in which a brain was first developed and ending with the most highly endowed human being. This is true for the simple reason that high intelligence and complex instincts sustain a causal relation to each other. That is to say, in any given class or species, the more highly developed the objective mind becomes, the more complex become the instincts; for the former is the cause of the latter. And this is brought about solely by the *development of secondary instincts*.

In order to make myself clearly understood in this connection, I must revert to what has already been said in relation to the distinction between primary and secondary instincts as laid down by Romanes and others. Not that I agree with Romanes as to the origin of primary instincts, for his doctrine relegates the whole question to the realm of chance;¹ but his general statement of the origin of secondary instincts is obviously correct as far as it goes. He explains their origin as follows: "By the effects of habit in successive generations, actions which were originally intelligent become, as it were, stereotyped into permanent instincts."²

This is what Lewes³ calls the "lapsing of intelligence,"—a term that is liable to mislead in the absence of explanation. The meaning is this: After an intelligent action has been performed for a certain length of time it is converted into an instinct, and as

¹ See "Mental Evolution in Animals," p. 177.

² Ibid.

³ Problems of Life and Mind.

such it is transmitted by inheritance, and succeeding generations perform the action automatically, that is, "without intelligence." The "intelligence" has "lapsed."

As before remarked, I accept Romanes' general statement of the origin of secondary instincts, or rather his definition of such instincts, because it is obviously correct. He does not, however, make the distinction quite clear between primary and secondary instincts, as he defines the former; nor does he give us any clue whatever leading to a knowledge of the time when or the means by which secondary instincts began to be developed. His want of clearness of distinction between the two classes is well illustrated in his selection of an illustration of the origin of primary instincts.

In order that I may be sure to do no injustice to the learned author, I will quote the entire passage relating to the origin and development of primary instincts:—

"The first mode of origin consists in natural selection, or survival of the fittest, continuously preserving actions which, although never intelligent, yet *happen* to have been of benefit to the animals which first *chanced* to perform them. Thus, for instance, take the instinct of incubation. It is quite impossible that any animal can ever have kept its eggs warm with the intelligent purpose of hatching out their contents; so we can only suppose that the incubating instinct began by warm-blooded animals showing that kind of attention to their eggs which we find to be frequently shown by cold-blooded animals. Thus, crabs and spiders carry about their eggs for the purpose of protecting them; and if, as animals gradually became warm-blooded, some

species, for this or for any other purpose, adopted a similar habit, the imparting of heat would have become incidental to the carrying about of the eggs. Consequently, as the imparting of heat promoted the process of hatching, those individuals which most constantly cuddled or brooded over their eggs would, other things equal, have been the most successful in rearing progeny; and so the incubating instinct would be developed *without there ever having been any intelligence in the matter.*"¹ (The italics are mine.)

It is difficult to see how the learned author is enabled to arrive at the conclusion that there never could have been "any intelligence in the matter," in view of the fact that the steps involved in the education of the animal, as he describes that process, presuppose a long series of intelligent observations as to the best conditions of successful incubation, followed by the intelligent adoption of the plan that had proved to be productive of the best results, and the *subsequent* stereotyping of that process into permanent instincts. It is obvious that the series of observations and experiments required by this variety of the theory of natural selection would have involved the exercise of far higher inductive powers than were employed in formulating the theory. The intense absurdity of the latter can be fully appreciated only when we reflect that the eggs of warm-blooded animals require a definite time for incubation, during which time they must be kept at a given temperature *continuously*. Any great or long-continued lapse from continuity in the temperature is necessarily fatal to the life within the egg. This law was in existence at the time when the supposed series of

¹ Op. cit. p. 177.

observations was being conducted. Every egg that was hatched during that time was, therefore, subjected to the necessary conditions of continuous heat. In the mean time the experimenters in various degrees of "coddling and brooding" must have died without issue. And it is obvious that if they had all been experimenters the class would have become extinct with the first generation. The fact that they did not become extinct is demonstrative that some of the eggs were subjected to the necessary continuous temperature at the very beginning, and that the process has been kept up ever since.

The only other supposition that could possibly account for the origin of the instinct of incubation on the theory of natural selection, is that the first warm-blooded animal that hatched a brood must have "accidentally" sat on her eggs continuously during the necessary period of incubation, say three weeks. The word "accidentally" is advisedly used, for the Darwinian theory of natural selection is the theory of accident, the hypothesis of chance; and this is the theory which Romanes, in the passage above quoted, avowedly adopts as his explanation of the origin of primary instincts. His words are these:—

"The first mode of origin consists in natural selection, or survival of the fittest, continuously preserving actions which, though *never intelligent*, yet *happen* to have been of benefit to the animals which first *chanced* to perform them."

It is superfluous to remark that the supposition that the process of incubation began by an "accidental" sitting by the parent animal of, say, three

weeks' duration, is in a very high degree improbable, to employ no harsher expression in its characterization. But the very last degree of improbability is reached when we stop to consider all that is involved in the theory of accidental incubation. Thus, the continuity of the requisite temperature is presupposed, as any serious lapse would be fatal to the embryo. This, in turn, involves a continuous sitting, which would be fatal to the parent, and must therefore be dismissed as impossible. The only alternate supposition is that the parent leaves the nest at least once a day to procure the necessary food to sustain life. But this, in turn, involves the "accidental" return to the nest, each day, in time to prevent the eggs from getting cold. Again, if prehistoric eggs required the same attention and manipulation that modern fowls find it profitable to bestow upon those of current history, we must suppose that they required daily turning over in the nest. This, of course, involves the supposition that each of the first collection of prehistoric eggs was "accidentally" turned each day for the required period of incubation.

Nor is this all; for this congeries of "accidents" must, of necessity, have been repeated by the next generation, and the next, and so on for an indefinite period, before the acts became "stereotyped into permanent instincts." This, however, is inferential, since our learned author has not vouchsafed the information as to how many repetitions of a favoring accident are required to convert it into a permanent instinct. But he does tell us, what Darwin had previously laid down as a general principle, that

"intelligent actions, after being performed during several generations, become converted into instincts and are inherited, as when birds on oceanic islands learn to avoid man."¹ If therefore it requires several generations to convert an intelligent action into an inheritable secondary instinct, we have a right to infer that it will require at least an equal number of generations to convert an "accident" into a permanent primary instinct; *a fortiori*, when it was developed, as Romanes assures us the instinct of incubation was developed, "without there ever having been any intelligence in the matter."

But as it is reasonably certain that no such series of "accidents," with an indefinite number of exact repetitions, ever did or ever could occur, we are driven to the conclusion that the learned author must hold that the accidental experience of one individual will be sufficient to "stereotype" the instinct and render it permanent; and this, too, in the absence of "any intelligence whatever." But as that is manifestly impossible in the absence of a very high order of intelligence, it must be dismissed as untenable in fact, as well as inconsistent with the learned author's own premises. In point of fact, any view that can be taken of the question from the standpoint of the theory of natural selection involves the predication of such a long series of "accidents" that the mere enumeration of them is a *reductio ad absurdum*.

In the mean time I must not be understood as rejecting the general Darwinian doctrine of natural selection. Much less do I reject the Lamarckian

¹ Darwin, Descent of Man, p. 67.

doctrine of "appetency." Least of all do I sympathize with that spirit of partisanship that accepts either theory to the exclusion of the other. They are both required—and much more besides—in any system of inductive philosophy that is capable of accounting for all the facts of organic and mental evolution.

What I object to is the attempt of materialism to overload any one theory with burdens that do not belong to it. It is in this spirit that I have ventured to draw attention to one or two of the many reasons for rejecting the doctrine that primary instincts have their origin in natural selection. The illustrations of the absurdity of that hypothesis might be multiplied indefinitely were it worth while to do so. I have used the instinct of incubation as an illustration simply because Romanes, by using it, tacitly admitted that it was best suited to his purpose. I will content myself with one more illustration.

The instinct of reproduction is certainly a primary instinct. It was fully developed in the first unicellular organism, else there never could have been a second unicellular organism; and the process of evolution of animal life would have ceased at the very threshold of sentient existence. The process of reproduction by unicellular organisms is by fission or segmentation. That is, the cell separates into two equal parts, each of which is a complete cell, endowed with all the attributes of the original cell. Now, in order to account for the origin of the primary instinct of reproduction on the theory of natural selection, we must suppose that an "accident" happened to the original cell resulting in splitting it in

two in the middle. Then we must suppose that each half gathered itself together, took account of stock, and discovered — “accidentally,” of course — that there was enough left to constitute a quorum, so to speak, and to complete an independent organism. The subsequent steps by which this accident was converted into a permanent instinct I leave to be decided by those who believe that the theory of natural selection, or the hypothesis of chance, is a sufficient explanation of all the phenomena incident to the progressive development of the organic world.

It is, however, useless to waste time in showing the absurdity of supposing that the instincts of primordial unicellular organisms owed their origin to natural selection; for I do not know that any biologist of prominence now seriously entertains that theory. The point I wish to make is that since some primary instincts of the most important character are inherent in the mental organism of animals, there is no valid reason for supposing that other primary instincts owe their origin to natural selection.

One of the primary rules of scientific investigation is that *we should never needlessly multiply causes*. That is to say, where an adequate cause of any class of phenomena is known to exist we have neither occasion nor logical right to seek other causes for the same or cognate phenomena. Now, we know that many of the primary instincts are inherent in the mental organism of animals. It is unnecessary, therefore, to invoke any other theory to account for any primary instinct, at least until it is first shown that the known cause is inadequate to explain all the phenomena. Until, therefore, the contrary

is demonstrated, we may safely assume that the instinct of incubation in warm-blooded animals arises from the same irresistible impulse that impels the lower animals to the acts of reproduction or nutrition, or any of the other acts necessary to self-preservation. It may, in fact, be safely assumed to be a law of evolutionary development, in the absence of proof or reason to the contrary, that every new species evolved is endowed with primary, that is, inherent, instincts adapted to its use and necessities. Were this not true, each new species would perish before "natural selection" could select.

I have dwelt at some length upon this branch of the subject for the reason that I desire to make the distinction clear between primary and secondary instincts. This has never been done heretofore; and it seems probable that the unnecessary exploitation of the theory of natural selection as an explanation of the origin of some of the primary instincts has arisen from the want of a clear apprehension of this distinction. In point of fact, in the hazy atmosphere of the old psychologies, it was impossible to perceive clearly the line of delimitation between the two classes of instincts. In other words, it was impossible, under the old psychology, to assign a specific, exclusive cause for the development of secondary instincts. This is the crucial question, for when that is known the distinction instantly becomes apparent.

I have quoted with approval Romanes' very general statement of the origin of secondary instincts. Briefly stated, it is that habit converts actions that were "originally intelligent" into "permanent

instincts." But he does not tell us what was the specific agency that enabled animals to perform "intelligent" actions that are so far distinct from the ordinary instinctive, automatic actions of animals that it requires generations of habitual performance to convert them into permanent instincts. Obviously, there is a clear line of demarcation somewhere between the two distinct classes of actions; and that the classes are so divergent in their nature, so antithetical in their characteristics, that it is impossible to refer them to a common origin.

What that distinction is, the intelligent reader who has followed me thus far has already anticipated. The following propositions will define my position with sufficient clearness to enable the reader to perceive the significance of the facts which will be adduced in this and in later chapters:—

1. Primary instincts are those which are inherent in the mental organism of animals in their native environment. They exist antecedent to reason, experience, or instruction, and are transmitted to posterity by inheritance. They include all that were possessed by animals prior to the development of a brain organism.

2. Secondary instincts all have their origin in that intelligence of which the brain is the organ, and are the result of the reaction of that intelligence upon a new or a changed environment.

3. They become permanent instincts after being "performed for several generations," and "are then inherited," the same as primary instincts (Darwin).

It will now be seen, by an examination of the facts, that the distinctions above made exactly accord with the history of organic evolution as set forth by Haeckel and other great lights of evolutionary science.

No such thing as a secondary instinct has been shown to have existed prior to the advent of animal life upon dry land. A brain did not exist during the primordial epoch. During the next epoch a brain began to be developed, and, simultaneously therewith, fern forests appeared upon land, thus rendering it habitable for animal life; and at the same time providing the material for the carboniferous strata which now furnish our supplies of coal and petroleum. And it is a significant fact that it was during the carboniferous period "that some fishes began to accustom themselves to live upon land, and thus gave rise to the amphibian class."¹

Here, then, are three coincidental facts of profound significance, namely: (a) the development of a brain; (b) the development of conditions favorable to the sustentation of animal life upon dry land, and (c) the advent of the amphibian class, — "the earliest terrestrial and air-breathing animals."²

Now, unless we rest content to adopt the hypothesis of chance to account for these facts, we must infer, (1) that a brain was developed in response to a rapidly approaching necessity for a change of environment; and (2) that such a change became possible by the simultaneous development of (a) terrestrial conditions rendering it possible for animal

¹ *The Evolution of Man*, vol. ii. p. 13.

² *Op. cit.*

life to be sustained on dry land, and (b) a mental organism capable of intelligently responding to those conditions.

Accordingly we find, as before remarked, (1) that a brain was developed during the second, or palæolithic epoch; (2) that during the middle palæolithic epoch, or carboniferous period, fern forests and air-breathing animals simultaneously appeared.

This was the first step in brain development in advance of that of the fishes. It was a small step, it is true, for the amphibia are but very little more intelligent than their immediate ancestors; but it was the beginning of a vastly more rapid development than was possible in a purely aquatic environment.

The reader is again referred to the table in Chapter V., showing the percentages of time consumed in the development of the various orders and classes of animals before and after the development of a brain.

It is obvious, at a glance, that the constantly increasing rapidity of development, as shown by the table, must be a fact of profound significance. And when we consider it in connection with the general principle laid down by Darwin and the other authorities quoted, that animals possessing the highest intelligence have the most complex instincts, we are prepared to understand the exact function which the brain performs in the development of animal intelligence. We are also enabled to locate the dividing line between primary and secondary instincts, and to understand the process by which the latter are primarily developed, and finally become fixed and inheritable attributes of the mind.

The following propositions are, therefore, provisionally submitted:—

1. The “intelligent actions” to which Darwin and Romanes refer as the bases of secondary instincts, are, in all cases, prompted by that intelligence of which the brain is the organ, namely, the objective mind.

2. The inciting causes of the activity and consequent development of the brain intelligence of the lower animals are changes of environmental conditions.

3. It follows, (a) that all instincts possessed by animals prior to the development of a brain are primary instincts; (b) that all instincts originally possessed by any given species are, in effect, primary instincts, even though the species itself may be the result of ancestral development of secondary instincts, and (c) that animal intelligence is necessarily proportioned to complexity of environmental conditions.

Enough has already been said to show, *prima facie*, that the first proposition is true; the table alone presenting sufficient *a priori* grounds to sustain that theory. If, therefore, the *a posteriori* reasons point to the same conclusion, the question may be considered as settled. The three propositions will be considered together.

In the first place, it is very evident that the slow progress of development during the primordial epoch was due to two causes, namely: (1) the purely aquatic environment, which allowed but little variation of conditions; and (2) the absence of brain development, which alone is able to take intelli-

gent advantage of any variation in environmental conditions.

The second, or primary, epoch presented a new condition, in that vegetable life was developed on dry land. But there was still only a limited variety of environmental conditions. It was the age of fern forests, — a gigantic vegetal growth of practically one genus. It afforded a temporary refuge for some of the more highly endowed fishes, and hence the gradual development of the amphibia. But the conditions on dry land at that time were even more monotonous than in the sea; and hence the inconceivably slow progress of development of animal life and intelligence. It required, as the table shows, more than thirty-two per cent of the time consumed since the beginning of organic life on this planet, to develop the amphibia, or, rather, to reach a higher order than the amphibia. In other words, it required untold millions of years to perfect that step in the process of organic evolution, notwithstanding the fact that it was taken in pursuance of an originally intelligent purpose, as distinguished from an instinctive impulse. It was, in fact, when fishes began to accustom themselves to live upon dry land that the first step was taken in the development of a secondary instinct. It was the first intelligent action of the brain mind that has left its impress upon the organic world.

It certainly was not a primary instinct that impelled a fish to abandon its native element even temporarily. It was an intelligent action, in pursuance of an intelligent purpose. It was, moreover, "an enterprise of great pith and moment," and one

that was deliberately taken, and often repeated, through several generations, before it was stereotyped into a permanent instinct. The theory of natural selection cannot be invoked to account for the beginning of that instinct; for it could not have been the result of an "accident." It is a matter of common observation that when a fish is accidentally thrown upon dry land he loses no time in working his way back to his native element; and he is not prone to repeat the experiment of his own volition. There could not, therefore, be the slightest tendency toward a hereditary transmission of terrestrial habits as the result of an accidental or enforced sojourn upon dry land. The tendency, in fact, would be to reinforce the primary instinct which impels fishes to remain in their native element. We must therefore exclude accident, or the element of chance, as a possible factor in the development of that secondary instinct which brought into being and perpetuated the amphibia.

In making this exclusion we thereby also exclude natural selection, or survival of the fittest, as the cause of the development of that particular genus. And I may here remark, parenthetically, that natural selection, or survival of the fittest, is not, properly speaking, the original cause of variation in, or origin of, species. I do not deny that it is a factor of the utmost importance; but it is not an original cause. It is not even a law of nature, strictly speaking; for natural law is properly defined as "the uniform occurrence of natural phenomena in the same way or order under the same conditions." The term "survival of the fittest" does not describe

a uniform occurrence of natural phenomena. On the contrary, it is made to cover a great variety of phenomena, some of them of exactly opposite character to others. Thus, among animals, other things being equal, those possessing the greatest strength are the ones that survive. In some cases it means a survival of the swiftest. Among the higher animals it is often the most sagacious, as in man. Among nations it was formerly a question of numbers and the physical prowess of the private soldier; and it was thus that the "fittest" to survive were the barbarous hordes that destroyed the civilization of ancient Rome. In modern times the most skilful men behind the biggest guns are the survivors, physical strength being a factor of the least importance. As between savages and civilized men in times of peace, the fittest to survive are those who require the least area of land from which to draw their sustenance. Thus, the North American Indian required a vast territory to supply him with the necessary game to enable him to live; while his civilized neighbor could sustain himself in comfort on a few acres of land. But in war the modern appliances of warfare place the savages at a disadvantage. As between different races living together and sustaining peaceful relations, the fittest to survive may be the ones who can live and labor on the least or the cheapest food. Thus, the Chinaman, who can live on a handful of rice per day, once threatened to starve the American laborer to death, and would have done so but for the passage of laws restricting Chinese immigration. In that case the inferior race would have been the fittest, and he

would have survived the wreck of our civilization. But, with the passage of that law, the conditions of survival were instantly reversed; for our ability to enforce that law depended upon our superior military and naval strength, notwithstanding the disparity in numbers.

It will thus be seen that the so-called law of "survival of the fittest" is not a law of nature, but a condition, — an incident, and not a primary cause. It is an effect of other and far deeper and more important causes.

In saying this, I must not be understood as seeking to eliminate natural selection or the survival of the fittest as a factor in the progressive development of organic life. Far from it. That theory is indispensable in any hypothesis which seeks to account for the existence of the organic world on principles of evolutionary development. What I wish to show is, that the theory is overloaded with burdens that do not properly belong to it; but, more particularly, that it is a condition the causes of which must themselves be accounted for on other grounds than those set forth by Darwin and his followers.

As before stated, theirs is the doctrine of chance. Eliminate that element from the Darwinian theory, and there is little left of it. Not that I would undertake to eliminate that factor entirely from the process of evolutionary development. No one who has intelligently observed the progressive development of varieties of species among domestic animals can doubt the fact that the element of accident or chance has entered very largely into the process. Among breeders of domestic animals this element

is largely though not entirely eliminated by intelligent artificial and sexual selection. But domestication itself is an accident; that is to say, it is out of the natural order, and the result of fortuitous circumstances.

We may, therefore, give due credit to the element of accident, and fortuitous changes of environment, which is much the same thing, for a large part of the phenomena of variation of species. And we may also give the theory the benefit of the doubt in many cases where the question of the origin of species is involved; since it is often difficult to determine whether two given animals belong to different species or represent extreme variations of the same species. It will become evident, however, as we proceed, that the element of chance is a less potent factor in the origin of species than it is in the production of morphological variations; that it is still less in the origin of genera than in that of species; that, in short, the farther we go back in the history of organic evolution the less potent is the element of chance; and the more potent is the element of intelligence, that is, instinctive intelligence, as a factor in the progressive development of the organic world.

Nevertheless, we cannot wholly eliminate fortuitism at any given stage; for it is obvious that many changes of environmental conditions may occur which animal intelligence cannot have originated; e. g., when a great cataclysm of nature segregates a genus or a species from the parent stock or its native environment.

This is somewhat of a digression; but it became

necessary in order to define clearly the issue between fortuitism, which is the argument of Darwin, Haeckel, and their followers, and the teleological argument of which I am building the foundation out of their own materials.

With that class of reasoners chance is everything, — especially everything of a causal nature. It is veiled under a multitude of words of learned length and scientific sound; but the last analysis of their argument reveals chance as their ultimate as well as their proximate cause. Thus, they assume that it was a fortuitous juxtaposition and final union of certain chemical elements that produced a living organism endowed with a mind (Haeckel). It was fortuitism that developed the primary instincts (Romanes). It was a series of accidents that was responsible for the origin of species (Darwin).

It will now be seen that the whole trend and tendency of their argument is to place organism in advance of intelligence, — physical structure in advance of mind. The obvious reason for this attitude is, that the clear, analytical mind of Darwin easily foresaw that if it were once admitted that mind sustained, in any degree whatsoever, a causal relation to physical structure, the admission, carried to its legitimate conclusion, would make for teleology or theism.

It thus becomes obvious why Darwin so contemptuously rejected the Lamarckian doctrine of appetency, which was, in a less clearly defined form, also held by his own grandfather, Erasmus Darwin. The Lamarckian theory is summed up with sufficient clearness for our present purpose by Geddes, in his article

on "Variation and Selection" in the "Encyclopædia Britannica," in words following: —

"The well-known theory of Lamarck laid special emphasis on function and environment; for, though the sense of need in association with suitable environment calls out a succession of efforts, and so originates incipient structural modifications, it is to increased functioning that the increase of these modifications must be ascribed, while similarly disuse explains degeneration. Changed conditions produce new wants, nutritive and reproductive; hence changes in climate, or the like, change the organism by changing its habits. Rapid increase is checked by other organisms: the strongest and best armed for attack devour the weaker, and the less perfect genera are kept down by the more perfect."

It will thus be seen that the gist of Lamarck's theory was that changes of physical structure are brought about in response to impulses from within, which impulses arise from the necessities imposed by environment. Lamarck illustrates the principle in the following words: —

"I conceive that a gasteropod mollusk, which, as it crawls along, finds the need of touching the bodies in front of it, makes the effort to touch those bodies with some of the foremost parts of its head, and sends to these every time quantities of nervous fluids, as well as other liquids. I conceive, I say, that it must result from this reiterated afflux towards the points in question that the nerves which abut at these points will, by slow degrees, be extended. Now, as in the same circumstances other fluids of the animal flow also to the same places, and especially nourishing fluids, it must follow that two or more tentacles will appear and

develop insensibly in those circumstances on the points referred to."

Now, if it be objected that such a process of growth would require very many generations to perfect the tentacles of a gasteropod mollusk, it may well be asked how long it would take to perform the same feat under natural selection? In other words, how many accidents of a similar character, occurring in the same family, in successive generations, would be required to endow a species permanently with tentacles?

The long neck of the giraffe has also been used to illustrate the Lamarckian theory; the necessities of its environment and the nature of its daily food requiring that animal to reach to the higher branches of trees in search of sustenance.

In view of the facts that modern science has experimentally developed regarding the unlimited power of the subjective mind of man over the functions, sensations, and conditions of his body, it requires no effort of imagination or of credulity, no soaring into regions of speculative philosophy, to arrive at the conclusion that the active agency of development resides *within* all sentient creatures; and that accident plays but a very subordinate part in the process of organic evolution.

Volumes might be filled with illustrative experiments made by scientists demonstrating the power of the subjective mind over the body—its power of modifying function, increasing or decreasing the circulation of the blood, of causing or allaying fevers, of healing or of causing lesions, as in bloody stig-

mata (Bernheim), or of its power over diseases in general; but the reader must be referred to the current literature on the subject. It must suffice to remark that the evidence is sufficient to warrant the provisional assumption that the subjective, or instinctive, minds of animals have the power of so modifying the structure of their bodies by constant refunctioning of particular parts, as to produce, in the course of time, new organs adapted to the exigencies of physical environment.

If we reason from the ontogeny of the individual to the phylogeny of the species, the evidence becomes conclusive in many instances. As this method of reasoning is constantly insisted upon by the ablest biologists as being demonstrative, we will cite an instance in point. It is well known that some insects, a few batrachians, and many fishes possess the power of changing their colors to conform to that of their immediate surroundings. This is done for the purpose of concealment from natural enemies; and the power, especially among fishes, is wonderfully near perfection. With some species a great variety of colors and color combinations seems to be at instant command. Now, it is obvious that this power of instantaneous change is brought about by an instinctive impulse. It is an adaptation of means to ends of so pronounced and varied a character that "reflex action" cannot be invoked as an explanation. Reasoning, therefore, from ontogeny to phylogeny, we must suppose that the faculty is the result of an instinctive impulse. And this is true whether we classify the instinct as primary or secondary. In other words, the impulse which caused the necessary

structural growth was from within ; and mind preceded organism and function.

It will thus be seen that the Lamarckian doctrine of appetency is a necessary factor in any theory of progressive development of animal life that is competent to explain all the facts. Neither the Darwinian theory of natural selection, nor the Lamarckian doctrine of appetency, is complete without the other. The latter, indeed, bears a causal relation to the former ; and it explains all that the doctrine of natural selection leaves unexplained. Moreover, appetency is a law of nature. Natural selection is not. No amount of sophistry, no weight of great names or authority, can invest a series of accidents with that dignity. Moreover, a series of accidents, however numerous or important, can neither cause nor adequately explain the orderly, progressive development of anything, much less the evolution of a universe, or a planet, or of humanity. It requires a law to do that ; and to Lamarck is due the credit of having made a partial discovery of that law.

It will now be seen that the true relation which Lamarckism and Darwinism sustain to each other is this: *The law of appetency underlies the phenomena of natural selection.* This will be further elucidated in subsequent chapters.

It remains to explain the *modus operandi* of the Lamarckian law ; and this brings us back to the propositions set forth just before the beginning of this digression.

Briefly restated, the gist of the propositions is this: Progressive development of animal intelligence, and concomitant structural changes, are

primarily due to the constant accretion of secondary instincts; the latter being the result of the development of the brain intelligence, and this, in turn, being due to a constantly increasing complexity of environmental conditions. The latter clause of the proposition will not be disputed after a moment's reflection. It is a matter of common experience and observation that, other things being equal, the culture and consequent progress of each individual depends largely, if not wholly, upon environmental conditions. The mute, inglorious Miltons who people the country churchyards differed from the author of "Paradise Lost" only because of the difference of environment. The farmer's son who forsakes the parental roof and becomes great and honored, who commands the applause of listening senates or wades through slaughter to a throne, may possess no more native talent than the brother who chooses to remain at home to break the stubborn glebe and inherit the homely joys and destiny obscure of his rude forefathers. The difference is due to a changed environment, whether the change be the result of accident, or of necessity, or of deliberate choice. Be that as it may, the fact remains that the greater complexities of the new environment furnish the stimuli to that culture which constitutes "intelligent adaptation." There are, of course, vast differences in the capacity of individuals to adapt themselves to new environments; and it is this difference that determines the question of survival of the fittest. In any event, it is an impulse from within that constitutes the motive power of progressional development.

The same rules hold good in the realm of animal

life. It is a change of environment that furnishes the stimulus to mental growth; and consequently, the more complex the new environment the greater the stimulus and the more rapid the progress toward intelligent adaptation to the new conditions. And as it is with a man, so it is with an animal: its ability to adapt itself to, and to take intelligent advantage of, new environmental conditions, constitutes the effective factor in its progressive development.

Now, as the instinct of self-preservation is one of the two generic primary instincts common to all sentient creatures, it follows that the salient features of any new environment in which one of the lower animals finds itself, and which stimulate its mental activity, consist of new dangers to be encountered and new methods of obtaining sustenance. These conditions must be met intelligently, if at all successfully. The primary instincts which belong to the animal in its native environment are useless to it when new dangers are encountered. In other words, the subjective mind, owing to its limitations, is not capable of coping with new conditions. But the objective, or brain, mind is specially adapted to that exigency; and as soon as it has learned the source of danger, it intelligently avoids it in the future. When this intelligent action has been performed for a few generations, it becomes converted into an instinct and is then inherited. Instances have already been cited.

This, then, is the way that secondary instincts are created or evolved. It must be remarked, in this connection, that old instincts are lost whenever the conditions of a new environment render them no

longer useful, as in the case of animals that have been domesticated.

We are now prepared to understand the full significance of the geometrically increasing ratio of development of animal intelligence after a brain became a factor in the process of evolution. Each successive epoch being distinguished by a constantly augmenting fauna, the environment was correspondingly increased in complexity. As dangers multiplied, the difficulty of obtaining food increased, and the consequence was that sagacity became a factor of constantly increasing importance. Even the larger carnivora, whose strength and ferocity rendered them irresistible in open warfare, were compelled to resort to strategic measures to secure their prey from among the weaker but swifter or more sagacious animals. The latter were compelled to exercise their sagacity, not only in securing nourishment, but in constantly guarding against dangers arising from contact with other animals who were armed with superior weapons of offensive and defensive warfare. Thus, it happens that, as Darwin declares, and all other intelligent naturalists admit (Cuvier excepted), animals possessing "the most wonderful instincts are certainly the most intelligent."¹

In the mean time the Lamarckian law prevailed, each newly acquired instinct effecting a corresponding modification of physical structure, which, in the fullness of time and amplitude of development, constituted either new genera or new species. Incidentally, natural selection tended to preserve those animals which were the most highly endowed, physically or

¹ Descent of Man, p. 67.

mentally. In other words, the so-called "law of survival of the fittest" is an incidental result of that struggle for life which followed the evolution of antagonistic genera and species under the law of appetency.

It will thus be seen that mind was, in all cases, antecedent to, and the cause of, structural changes. It must not be forgotten, however, that it was the subjective, or instinctive, mind that effected all progressive development, from the moneron to man. The objective, or brain, mind is, and always has been, the educator of the subjective mind. That is to say, by its intelligent action in emergencies it constantly originated new or secondary instincts; and these, in turn, became a part of the subjective mental equipment of the animal, and, by inheritance, of the species to which it belonged. In the mean time each instinct, primary or secondary, continues to form an inheritable part of the mental equipment of a species as long as it is useful.

The mental equipment, therefore, of each individual animal, other things being equal, comprises the sum-total of all its ancestral instincts that remain useful, plus its objective, or reasoning, intelligence. Hence it is that the great bulk of the aggregate of animal intelligence consists of that consolidated, correlated congeries of primary and secondary instincts which has been inherited from its ancestry, near and remote.

CHAPTER VII.

RECAPITULATION.

Instincts of the Unicellular Organism. — Its Impellent Energy. — The Constant Force back of Evolution. — The Law is Progress. — Nature's *Novum Organum*. — Useful Instincts a Permanent Heritage. — Appetency the Effective Agency of Progressive Development. — Every Mind Organism a Union of Elements of Conservation and Progress. — The Immutability of Natural Law. — The same Laws prevail in Organic and Mental, Moral and Spiritual Development. — Primary Instincts the same in Animals and Men. — The same is true of Secondary Instincts. — Instinct and Intuition Identical. — Emotions have the same Root and Origin. — Religious Worship a Filial Emotion. — Animal Telepathy. — Telekinetic Energy. — Objective and Subjective Memory differentiated. — In Men as in Animals the Increasing Complexities of Environment the Spur to Progressive Development. — In Men as in Animals the Bulk of Intelligence is Subjective. — The Ultimate Ego is the Subjective Entity. — All that is worth Preserving in the Future Life resides in the Subjective Mind.

THE salient features of the processes of organic and mental evolution, thus far developed, may be summed up by way of recapitulation as follows:

- I. The unicellular organism, from which science traces the pedigree of man, possesses, in common with all other animals, what is generically termed the "instinct of self-preservation." In other words, it possesses the inherent, intuitional power or faculty of perception, antecedent to reason or instruction, of the essential laws of its being, including the law of progressive development.

2. This instinctive perception constantly impels to acts preservative of the individual and of the species, including those which are promotive of improvement.

3. This instinctive impulse constitutes the *constant force* in nature which is the efficient cause of the evolution of all genera and species.

4. This constant force is modified by environmental conditions; and hence the infinite variety and number of genera and species.

5. The law, however, is progress; and hence there was a constant, though slow rate of progressive development during the primordial epoch, at the close of which a brain was developed and the lowest of the vertebrata appeared.

6. When a brain appeared, it was literally a *novum organum* — a new organ — of mentation; and, true to the Baconian nomenclature, it was the organ of “inductive reasoning;” and this became the educator of instinct.

7. This education was carried on by the intelligent performance of acts which were useful or preservative, which acts were in process of time converted into instincts and then became the permanent heritage of the species.

8. The objective, or brain, mind is, therefore, the agency by which new emergencies are met and new instincts are developed; and the subjective, or instinctive, mind is the agency by which the new or secondary instincts are assimilated, retained, coordinated with other faculties, and thus made of permanent benefit to the species.

9. In the mean time that primordial impulse which

has been denominated "appetency," and which is the effective agency, *par excellence*, of progressive development, is the inseparable concomitant, if not indeed an integral element, of the instinct of self-preservation; and it is still as potential an element of every subjective intelligence as it was when the first group of amœbæ united to form a multicellular organism.

10. It follows that every animal intelligence unites within itself the elements, not only for its own conservation, but for its progressive development; and, all being faculties of the subjective mind, they are transmissible by inheritance, and are consequently the permanent endowment of the species to which it belongs.

11. Again, as remarked at the close of the preceding chapter, the mental equipment of each individual animal, other things being equal, comprises the sum-total of all its ancestral instincts, primary and secondary, that have remained useful, plus its objective, or reasoning, intelligence.

12. The foregoing considerations are at once explanatory and confirmative of the conclusion arrived at by Pouchet and Morgan, and admitted by Darwin, that animals possessing the most complex instincts are the most intelligent.

We are now prepared to take one step further in tracing the processes of evolutionary development of mind on this planet.

That there is "no variableness or shadow of turning" in the Great First Cause is an axiom that will not be disputed by the theologian who sees the hand of God in the processes of evolution, nor by the materi-

alistic scientist who has convinced himself, by his peculiar processes of "induction," that the evolutionary development of physical and mental organisms is the result of a blind operation of correlate forces inherent in matter.

Neither of them should, therefore, be incredulous when he is told that the same laws and processes that developed the mental organism of animals, from the moneron to man, are the active agencies of man's progressive development from primitive savagery to the highest civilization, mental, moral, and religious.

I have already remarked upon the fact that the great bulk of the intelligence of an animal is made up of its accumulated ancestral instincts and propensities; the brain intelligence being merely a useful adjunct specially adapted to the exigencies of a physical environment. This is obviously true for two reasons, namely, the comparatively limited brain, or objective, intelligence of animals; but especially because all the primary instincts and propensities were inherited from the skull-less animals of the primordial epoch.

Now, if man is descended from the lower animals, it follows that the same is true of him; the only possible difference being one of degree or of modifications resulting from environmental conditions. A few words will make my meaning clear.

That the primary instincts are shared in common by man and the lower animals, does not admit of argument or dispute. These obviously belong to the primary intelligence, or the subjective mind,—the mind that existed millions of years antecedent

to the objective mind, of which the brain is the organ.

The same is necessarily true of the secondary instincts; for they are but so many additions to the original stock of primary instincts. All instincts, therefore, belong to the subjective mind.

Intuition, being but another name for a higher instinct, also belongs to the subjective mind; as also does its concomitant faculty of potentially inerrant deduction.

The "emotions" of man are obviously identical with the "animal propensities" of his lower ancestors; and as they antedate the brain, they are necessarily faculties of the subjective mind. The higher emotions of man being but the modified, educated, regulated, and purified emotions or propensities of the lower animals, must all be classed as faculties of the subjective mind. Even the emotion of religious worship finds its root and origin in the intuitive recognition of the Divine Fatherhood.

That the faculty of telepathy also belongs to the subjective mind has been amply demonstrated by researches in experimental psychology, notably those of the Society for Psychical Research. Whether animals possess that faculty in such a degree as to be able to communicate with each other, and if so to what extent, are mooted questions among scientists. It is, however, a well-established fact that man can impress certain domestic animals¹ telepathically. Be that as it may, it may be set down as axiomatic that any faculty that is found to exist in the subjective mind of man necessarily existed,

¹ See "The Law of Psychic Phenomena," chapter ix.

potentially at least, in the minds of his ancestry, near and remote. It is, in fact, upon this fundamental truth that the vitality of evolutionary processes depends.

Telekinetic energy, which has been variously designated as psychic force (Sir William Crookes), ectenic force (Professor Thury), and telekinesis (Professor Coues), is demonstrably a power or faculty of the subjective mind. This is true whether we attribute its phenomena to the embodied or to the disembodied souls of men. This, I scarcely need to remark, is the power to move ponderable bodies without physical contact or mechanical agencies. I shall have more to say of this force hereinafter. It is mentioned here only to complete the list of subjective faculties as set forth in the tabular statement in Chapter II., to which the reader is again referred. In the mean time I ask the reader to accept the statement, provisionally, that telekinetic energy belongs wholly to the subjective mind.

I have reserved the faculty of memory for the last, because it is shared by the objective mind. Moreover, it is the only faculty that is shared by the two minds. But the points of differentiation are so numerous and so radical that they must be considered separately.

The memory of the objective mind is merely the concomitant of induction, the latter being the only faculty belonging exclusively to the objective mind. As induction presupposes facts to reason from, its organ is necessarily endowed with a memory. But, like every other physical organ, the brain has its limitations of power, and these are extended by

exercise and cultivation. Cerebral anatomists tell us that a new brain cell is created for every new objective experience. These cells, therefore, constitute receptacles for brain memories; and their efficiency depends upon constant or frequent refunctioning. If that is neglected, the cell necessarily atrophies, precisely as every other physical organ atrophies for lack of exercise. Hence the so-called imperfection, or evanescent character, of the memory of the objective mind. Hence, also, the common observation that our stock of knowledge is measured by what we remember and not by what we have learned.

This is eminently true of both minds; but as the subjective mind is not dependent for its continued existence nor for its efficiency upon any physical organ or organism, its memory does not depend upon the continued refunctioning of brain cells, nor, indeed, of those of any other physical organ. Its memory is therefore an inherent power or faculty which defies the analysis of the physicist, and cannot be eliminated with the scalpel. The subjective mind, therefore, is literally the "storehouse of memory," for it retains and assimilates everything that the objective mind acquires, besides much of what the latter has never consciously possessed.

Nor are these all of the memorial possessions of the subjective mind. As we have already seen in discussing animal instinct, whenever an action becomes instinctive it is transmitted by inheritance to the posterity of the animal, and it is retained as the heritage of all future generations so long as it remains useful to the species. This being true alike of

primary and secondary instincts, it follows that the subjective, or instinctive, mind of each animal is a storehouse, not only of memories of individual experiences, but of all its ancestral experiences that remain useful. That the same proposition is true of man's subjective mind it needs no argument to sustain. Nor must we lose sight of the correlative fact, which all intelligent naturalists now admit, that the higher the intelligence of animals the more complex are their instincts; and that the same is necessarily true of man. Then, when we reflect that the range and complexity of man's instinctive intelligence are constantly augmented by the multiplying variations of his environmental conditions incident to the progressive development of civilization, which in turn is constantly creating new wants and necessities of existence, physical, mental, moral, and spiritual, and as constantly revealing correlative dangers to be avoided or overcome, we may begin to realize how infinitely complex must be the instincts of man when compared with those of the most intelligent of the lower animals.

Again, as with the lower animals, so with man, acquired or secondary instincts, together with primary instincts, are transmitted by descent, and remain as hereditaments of the species so long as they remain useful. It follows that with man as with animals, the subjective mind is the storehouse of ancestral memories; and when we add to these the perfect memory of individual experiences and of acquired knowledge, however superficially it may have been impressed upon the objective mind, we may begin to approach a realization of what a vast

storehouse of latent memorial intelligence is the subjective mind of the average civilized man.

It will now be seen that it is true of man as it is of the lower animals, that the great bulk of his intelligence is resident in the subjective mind. The psycho-physical faculty of inductive reasoning constitutes the only exception; and that faculty, as I have often repeated, is simply a highly specialized faculty which is the function of a highly differentiated physical organ, and is especially adapted to serve as a temporary guide through the mazes of a physical environment. But it is no more a permanent faculty of the ultimate Ego than is any other physical function, and for precisely the same reason: it would be useless in any other than a physical environment. In dealing with the subjective mind of man, therefore, we are dealing with all that goes to make up the real man, all, indeed, that could contribute to a perfect manhood in an environment of truth. We are dealing with all of man that can possibly survive the dissolution of the physical investiture,—all that is worth preserving for the future life. But it must not be forgotten that we are also dealing with an entity whose every faculty is essential, and is moreover especially adapted, to the existence of a disembodied soul in an environment of perfect truth.¹

It remains to inquire how this entity has been developed since man appeared. This inquiry will necessarily include the evolution of civilization from savagery, and incidentally of the evolution of man as a moral and religious being. This, of course, is a

¹ For a full discussion of this branch of the general subject, see "A Scientific Demonstration of the Future Life."

vast subject, to treat which exhaustively would require many volumes. I shall therefore be compelled to content myself with a brief generalization, my principal object being to state the general psychological principles involved in the process of development.

CHAPTER VIII.

THE TWO GREAT GENERIC INSTINCTS.

The Simplicity of Nature's Laws. — Evolution no Exception. — Two Instincts responsible for all the Phenomena of Evolutionary Development. — Self-Preservation and the Instinct of Evolution: one Conservative, the other Progressive and Creative. — Natural Selection not a Law, but an Incident. — Evolutionary Instinct a Constant Force. — It is also Altruistic in all its Impulses. — Illustrations from Every-Day Life. — Fallacies of the Old Philosophies. — They refer Everything to Instinct of Self-Preservation. — With them all Virtue or Benevolence a Sublimated Form of Selfishness. — Herbert Spencer's Philosophy of Utilitarianism. — Pure Selfishness. — Altruistic Acts the most Pleasurable, because in Harmony with the Strongest Instinct. — Primordial Altruism. — The Creative Energy Inherent in all Sentient Creatures. — Human Character determined by Relative Development of the Two Instincts. — Altruistic Impulses Predominant in the World. — Welfare of Future Generations the Incentive. — Schools, Colleges, Churches, and Eleemosynary Institutions, are Examples. — Altruistic Instinct Stronger than Instinct of Self-Preservation, otherwise there could be no Progress. — The most Altruistic Governments the most Progressive, and the People the most Patriotic and Brave and Warlike and Humane. — Progress toward Universal Altruism Constant and Rapid. — Atavistic and Degenerate Nations. — Their Decadence. — Central Ideas of Evolutionists and Christian Theism harmonized. — The Evolutionary Instinct the Impellent Energy of Physical, Mental, Moral, and Religious Progress.

IT is a common remark that the laws of nature are simple to the last degree. This is literally true, at least in the sense that they can generally be formulated in terms that are easily understood. The law of organic evolution constitutes no exception to this rule. Indeed it furnishes one of the most strik-

ing illustrations of it ; for it will be found upon the last analysis that every step in organic evolution, every advance in the evolution of civilization, every step in mental, moral, or spiritual development, are directly referable to two primordial instincts. The first is the instinct of self-preservation, and the second is that to which the Lamarckian philosophers have given the very inadequate title of "appetency." The term was doubtless expressive of all that it was intended to embrace ; but, for reasons which will appear later on, it is inadequate to express all that it implies. I shall provisionally designate it as the *evolutionary instinct*, and define it as the instinct which impels the organic world onward in the path of progressive development. A moment's reflection will make it clear that without such an instinct there could be no real progress in the organic world. The instinct of self-preservation is merely the conservator of existing conditions, and is destitute of a single impulse toward progress. It is purely self-regarding and conservative ; and with that alone as a motive force the process of organic evolution would have been arrested at the threshold of sentient existence. The monera would have remained in the mass for all time ; for in the absence of the progressive impulse there would have been no incentive to reproduction.

The term "evolution" is expressive of a series of progressive changes, or a process of progressive development. That it is a law of nature no one will gainsay. Being a law of nature, it presupposes a constant, impellent, antecedent force or energy inherent in each individual organism that is subject to the law. The only possible alternative hypothe-

ses are miracle and chance; and either one would remove the subject-matter outside the domain of law. The former, of course, cannot be considered in a scientific treatise. The latter can only be treated as a possible factor; but it is merely incidental and always subordinate. Accidents may, and constantly do, happen; and an accident may modify or control, favorably or otherwise, the orderly sequence of events naturally arising from a constantly operative antecedent cause. But neither an accident nor the result of an accident, however frequently the former may be repeated or however uniform or beneficent may be the latter, can ever be elevated to the dignity of a law of nature. The same may be said of incidents happening in the regular course of things, for they are always subordinate to the main purpose. And this is the best that can be said of the so-called law of natural selection, or the survival of the fittest. It is incidental to the law of evolution; it is not the law itself. It occurs in the natural order of progressive development; but it does not, of itself, constitute the process of development. It is, indeed, an indispensable concomitant of the process. But it is preservative, not causative.

This, indeed, is all that Darwin himself claimed for natural selection. "It implies only the preservation of such variations as *arise* and are beneficial to the being under its conditions of life,"¹ are his words. The rest was left to chance. Romanes adopts natural selection as his theory of the origin of primary instincts, as I have pointed out in a previous chapter,

¹ Origin of Species, p. 99.

and distinctly relegates everything to chance. As I have before intimated, I do not object to the theory of natural selection when considered solely as the preservative element of organic evolution. But the theory, as set forth by its author and his followers, presupposes the "variations," or structural changes, to arise from chance, and not from any instinctive impulse due to the necessities of the being under its environmental conditions. The Darwinian theory is, therefore, conspicuously inadequate as an explanation of the most important part of the process of organic evolution. It is wholly negative in its character and scope, in that it fails to point out that positive, constant force or energy that could alone entitle it to a place in the category of ascertained laws of nature. This omission, as I have already repeatedly pointed out, is supplied by the Lamarckian doctrine of "appetency," or, as I have designated it, the "evolutionary instinct."

The theory of evolution, however, can be simplified to the last degree and rendered adequate to the explanation of all the facts by assuming the evolutionary instinct to be simply correlative to the instinct of self-preservation. The latter has been grievously overloaded by the philosophic world, and forced to perform duties that were utterly foreign to the purposes of its existence. By a system of logical legerdemain it has been made to pose in the guise of altruism, whereas altruism is its absolute opposite. It has been burdened with the care of the family, the tribe, the state, and the nation, and charged with the duty of promoting progress; whereas it is at best but the conservator of that

which ministers to self. It is, therefore, purely negative in its character; for it is utterly destitute of that positive energy which makes for progress. That energy is supplied by the instinct of evolution. And it is only by including that as one of the primordial instincts, and as merely a concomitant of the instinct of self-preservation, that a theory of evolution can be formulated that will account for all the facts.

This instinct, broadly speaking, is the impulse toward improvement, as distinguished from the impulse to preserve. In the lower animals it was expended largely in the improvement of physical structure as a means of ameliorating the conditions of environment. In man it lies at the root of all efforts toward improvement and progress in every department of human activity. It is, in short, that constant, impulsive force or energy which renders every normal human being unsatisfied with present conditions. Its absence in any field of human endeavor leads to stagnation, arrested development, senile conservatism, and consequent atrophy. It is the impulse that leads every man to accumulate the means, not only to better his own condition, but to give his children greater advantages than he himself possessed. Abnormally developed, it leads to hoarding useless wealth without reference to posterity. It is the impulse that leads the civilized municipality, state, or nation to establish educational institutions for the benefit of posterity. It is the impulse that leads to legislation for the encouragement of enterprise and for the gradual improvement of moral and social conditions. Its

abnormal development breeds those impractical reformers who, forgetting that the salient evils of society are the expressions of the defects of common humanity as it exists for the time being, seek to enforce their peculiar notions of morality by legislation. It is the impulse that leads the enlightened nations of the earth to expand the area of Christian civilization, and to extend to other less favored peoples the blessings of good government. In a word, it lies at the root of all missionary effort, whether of individuals, of societies, or of nations.

Without further illustration it will readily be seen that this instinct may also be appropriately designated as the *altruistic instinct*; for its every normal manifestation is *for the benefit of others, especially for future generations*.

It is the concomitant of the instinct of self-preservation; but that they are not identical is evidenced by the fact that one may be manifested to the exclusion of the other. Thus, some insects end their lives with the act of reproduction; while some fishes will devour their own offspring to satisfy their hunger if not prevented by their mates. Some men and women will starve themselves for the sake of giving their children an education and a start in life superior to their own; while others will starve their children for the sake of hoarding money for the gratification of their own wants and appetite. In a word, the instinct of self-preservation is just what its designation indicates, and nothing more. It is conservative, not progressive; it is preservative, not creative; it is selfish, not altruistic. Normally the two instincts harmonize with beneficent results, for they

supplement and balance each other; but under abnormal conditions one may predominate to the exclusion of the other.

In the mean time philosophers and scientists have, from time immemorial, conspired to overload the instinct of self-preservation with burdens that do not belong to it. Thus, it is a common observation that all human actions, in their last analysis, are prompted by pure selfishness, the substratum of which is the instinct of self-preservation. By a subtle process of reasoning they have sought to refer to that instinct the care of the parent for the child, the love of husbands and wives, the love of the patriot for his country, the love of the philanthropist for humanity, the love of humanity for God. In short, they have sought to eliminate every virtue from the human soul, or to degrade it to the dismal level of sordid selfishness. Even Christian philosophers have sometimes been misled by the plausible character of the reasoning, and some have adopted it on the score of its primal "simplicity." They have even sought to show forth the wisdom of God in thus being able to convert the most inherently selfish instinct into an instrument for the promotion of the purest altruism. It is a "simple" proposition, it is true, but to attempt to demonstrate its truth logically involves a strain that reason itself is not able to endure. One would suppose from such reasoning that God was limited in his supply of instincts, since one is made to subserve so many antagonistic purposes. Besides, if it is true that what we call altruism is but selfishness in another form, it is still selfishness and not altruism. Therefore altruism does not exist. The same is true of all

other so-called virtues, according to their reasoning. Therefore virtue does not exist; and all the so-called virtues of the human soul are reduced, in their ultimate analysis, to the level of that instinct that causes a cornered rat to fight for its life.

This is a rough but truthful way of stating the ultimate conclusion of those philosophers who hold that the one instinct of self-preservation is sufficient to account for all the phenomena of organic and mental and moral evolution. Mr. Herbert Spencer is, perhaps, the most illustrious example. This great philosopher labors through many pages of subtle analysis to the conclusion that "every altruistic feeling needs the corresponding egoistic feeling as an indispensable factor."¹ I do not quote this passage for the purpose of controverting his premises or this specific conclusion; for it is but another way of saying that benevolent actions are productive of pleasurable emotions in the mind of the benefactor. Nobody can, or will, dispute that proposition; for it is but a specific statement of a great truth, namely, that to the normally constituted human being it is more pleasurable to do right than it is to do wrong. Humanity would be in a pitiable condition if the opposite were true; that is, if every virtuous action were productive of painful instead of pleasurable emotions. Doubtless many of them are; but that is merely incidental to the process of evolutionary development, and not a general law. The law is that the normal human being derives more pleasure from doing right than he does from doing wrong. This being true, while it tends to confirm Mr. Spencer's

¹ Principles of Psychology, vol. ii. 2, part ix., p. 616 (Corollaries.)

specific conclusion above quoted, it completely disproves his general conclusion, which is that all progressive development, mental, social, moral, and altruistic, is brought about by natural selection. In the chapter above quoted from, he distinctly says that "the altruistic sentiments adjust themselves to the modes of conduct that are permanently beneficial."¹ This, of course, is natural selection, pure and simple; besides being a reduction, in specific terms, of the highest and purest altruism to a purely utilitarian basis.

Now, no one will deny the proposition that the greatest pleasure that any sentient being can experience arises from the performance of those acts which are prompted by, or are in harmony with, the natural instincts. Moreover, the pleasure experienced is directly proportioned to the strength of the instinct. It needs no argument to sustain these propositions.

If therefore it is true, as Mr. Spencer holds, that the altruistic acts of highly developed human beings are the most pleasurable that they can experience, it follows that those acts are prompted by, or are in harmony with, the strongest instinct with which sentient creatures are endowed, not excepting the instinct of self-preservation. But this conclusion is the exact opposite of that to which Mr. Spencer's premises lead. His theory, being based upon the principle of natural selection, is that altruism is developed, not in harmony with any natural instinct, but by an intelligent adjustment to such modes of conduct as have been found to be "permanently

¹ *Op. cit.* p. 618 *et seq.*

beneficial." This, of course, is brought about in defiance of the natural, selfish instincts, including that of self-preservation; otherwise it must be by some sort of transformation of the inherently selfish instincts into purely unselfish emotions. This can be done only by a process of logical legerdemain, and in utter disregard of the plainest facts of organic and mental evolution.

I have before spoken of the alleged "simplicity" of the theory that the selfish instincts are thus transformed; but it is difficult to see how it can be held to be simple except in the statement of the proposition, since it involves a palpable contradiction in terms and a logical difficulty that is absolutely insurmountable. The proverbial simplicity of nature's laws does not involve contradictions, either in fact or in logic; and the twin theories that altruism originates in the purely selfish instincts, and that altruism is, in fact, pure selfishness, mitigated only by the incidental circumstance that it benefits somebody else, is a contradiction as gross and palpable as ever entered into the philosophy of materialism. They properly belong, however, to that system of philosophy which seeks to eliminate intelligence from the universe as a causative agency, and to relegate everything to chance or natural selection.

I have already shown that Darwin's theory of natural selection is incomplete and inadequate to explain all the facts of organic evolution. The same remarks apply to mental and moral evolution, — the evolution of civilization. That is to say, natural selection is an incidental factor in the process; but it is inadequate as an explanation of the

whole process, because it is not a constant force tending always in the one direction. Such a force, constant and ever progressive, we find in the evolution of animal life, and it has been named "appetency." But that instinct obviously warrants a broader generalization, which, in turn, suggests the necessity for a new name. I have ventured to call it the "evolutionary instinct." But even this does not express all of its potentialities. It may be described, however, in general terms, by saying that it is the instinct *that impels all sentient creatures to the performance of acts which inure to the benefit of the species and of future generations.*

This, of course, includes the act of reproduction; for that pertains exclusively to future generations. It includes the care of the young, for the same reason. It includes those impulses which result in the progressive development of the physical structure, and which evolutionists have denominated "appetency," for they also inure to the benefit of the species and of future generations.

Here it must be remarked of these three primordial instincts or impulses:—

First, that the instinct of reproduction in animals is independent of the instinct of self-preservation; and in the human race the two instincts are often in direct antagonism, as in cases of over-population.

Secondly, that the impulse which leads to the care of the young is also independent of the instinct of self-preservation; and is often in antagonism to it, as in cases where the parent sacrifices her own life for the preservation of her offspring.

A corollary of these propositions is that the

primordial instinct which cares for the welfare of the species and of future generations is normally stronger than the instinct of self-preservation.

And this is primordial altruism, into which the element of selfishness as such does not enter.

Thirdly, it must be here remarked that the inherent power which developed and improved the physical structures of all sentient creatures was *the creative energy of organic evolution, without which "there was not anything made that was made."*

The reader will now perceive the adumbration of a great truth, which, as thus far developed, may be formulated as follows:—

The primordial cell was endowed, *ab initio*, with instincts which, in their normal interrelated activities, constitute a constant energy that is both progressive and conservative, creative and preservative, self-regarding and altruistic. Being primordial instincts, they are the heritage of all sentient creatures, and hence we may expect to witness their ultimate development in man.

And this is precisely what we do find in man, individually and collectively. We find that he still retains the instinct of self-preservation, with all the selfishness that its abnormal development implies, all too frequently manifested in his character, individual and national. We also find the altruistic instinct retained and developed, broadened and ever broadening, elevated and ever reaching into higher realms. And we also find, by an analysis that any one can make for himself, that man's whole character, in all the relations of his life, whether he is considered as an individual, a husband or a father,

a neighbor or a citizen, a moral or a religious being, is determined by the relative development and dominance of the two instincts.

It might be inferred from these remarks that the two are incompatible, since they are so often in antagonism. But, as in natural selection, this is an incident and not a law. They are both necessary, and when harmoniously developed and balanced, they are never in antagonism. The latter is incidental to the state of transition from the animal to man, from primitive savagery to civilization.

It is the mental phenomena incident to this transitory state that give rise to so much subtle analysis and sophistication on the part of those philosophers and scientists who examine monads and morals with the same microscope. These are the philosophers who find in the soul of man nothing but selfishness, no basis of human integrity but in the instinct of self-preservation, no virtue but in lack of opportunity, no altruism but in some form of self-indulgence, no religion but in fear of future punishment.

Nevertheless, the altruistic acts of civilized beings predominate. Every family of children is a living attestation of this truth. Every schoolhouse, church, and eleemosynary institution is a monumental evidence of it. Every mission, foreign or domestic, proclaims it. Every legislative act for the benefit of future generations is an expression of national altruism. This list might be indefinitely extended without including a tithe of the acts that are daily and hourly being performed by millions of self-sacrificing men and women whose only reward or

hope of reward is the consciousness that their toil will benefit others.

I do not underestimate the element of self-regard that may enter into many of the acts which inure to the benefit of future generations. The two impulses, when harmoniously developed, as they are in every normal man and woman, are concomitants; for, obviously, every one must preserve his own life if he would benefit others. But what I do say is that when the balance is struck between those acts which are performed under the impulses derived from the instinct of self-preservation and those which are prompted by the altruistic instinct, an overwhelming preponderance will be found on the side of altruism.

The myriad little acts, for the benefit of others, which constitute the daily life of all mothers and fathers, neighbors and friends, largely swell the balance which must be credited on the side of instinctive altruism. They are unheralded, unnoted, and unrecorded, save in the book of the "Recording Angel;" but they are often the deeds of heroes and of martyrs. The unobservant world takes no note of them; for its attention is constantly solicited to the daily record of crimes. Besides, "the evil that men do lives after them; the good is oft interred with their bones." It is not strange, therefore, that the superficial observer is unconsciously led to the belief that selfishness, with its train of manifold evils, is the rule and not the exception; or that even great philosophers should come to regard all altruistic feeling as but a sublimated form of selfishness. We should not, therefore, judge the busy world too

harshly for its lack of close observation, or its want of analytical power. Nor should we condemn the philosopher for the conclusions which he derives from a close analysis of psychological phenomena; for it is axiomatic with the old psychologists, that each student of the science must be guided, in the solution of problems, largely by the recognized states of his own inner consciousness.¹

I think that it can safely be said that the foregoing facts constitute presumptive evidence that there exists in all sentient creatures, from the moneron to man, an instinct that can be appropriately designated by no name less comprehensive than that of the "evolutionary instinct;" that in its moral aspects it must be called the "altruistic instinct;" and that it is distinct and separable from the instinct of self-preservation. If conclusive evidence is wanting, it is found in the fact that, when the two instincts are in the balance, the altruistic instinct normally prevails. This is evidenced in a thousand ways, some of which I have already mentioned. It is demonstrably proven by the broad fact that progress is being made in civilization, and that the greatest progress is made among those nations whose form of government is the most

¹ That "inner consciousness" is an unsafe guide, is evidenced by the fact that under the old system (or want of system) there were as many psychologies, each contradictory of the others, as there were psychologists of variant idiosyncrasies. The fact that the latter were responsible for each one's "recognized states of his own inner consciousness" accounts for the chaotic condition of the old psychology. Obviously this arose from the lack of a valid working hypothesis, applicable alike to all states of consciousness, and adequate to the explication of all psychological phenomena.

altruistic, whose laws accord the fullest recognition of the rights of the people. It is among the people of such nations that the dominance of the altruistic instinct over that of self-preservation is most frequently made manifest. In them it is manifested in the habitual disregard of danger to self when the lives of others are at stake, — in the firemen who risk and often sacrifice their lives in rescuing women and children from the flames, in the pilot who perishes at the wheel while steering a burning passenger-laden boat to the shore, in the soldier who without conscription offers his life to his country and humanity, in the sailors who instinctively seat all the passengers of a sinking ship in the lifeboats before taking thought for their own safety.

It is true that a high degree of national altruism must be attained before such deeds become habitual, instinctive, and characteristic of a people. But that such nations exist is current history. It is also true that there are nations, calling themselves civilized, that have not yet risen to that moral altitude, or have fallen below it, whose sailors instinctively seize the lifeboats of a sinking ship and brain the women and children who seek to share their safety.

Nevertheless, the world is tending toward the higher altruism, national and individual. There may be cases of arrested development, atavism, degeneracy, and national decadence; and one of the surest evidences of it is the habitual disregard of the rights of women and children, of which the savage brutality above mentioned is merely the efflorescence. Fortunately, however, sterility and degeneration are concomitants with a causal connection; and racial

extinction, therefore, is but a question of time. Atavism, with all that the name implies, antecedent and consequent, is an incident of evolutionary development, as well of civilization as of organic life; but natural selection, or survival of the fittest, gradually eliminates all elements of antagonism to that primordial energy which is the cause of all evolution. And as that energy is as constant and as potent in the evolution of civilization as it was in the primordial cell, we may rest assured that neither the atavism of one race nor the primitive savagery of another can arrest the onward and upward progress of humanity toward universal altruism.

It will now be seen that in making the foregoing remarks I have not antagonized the central idea of the most rigidly scientific evolutionist; for if there is any one thing that he labors to establish that is more vital to his hypothesis than any other, it is that *the potentialities of manhood reside in the primordial cell*. And this is just what I have been laboring to prove, and I submit that I have given better reasons for that belief than he has; for by showing that altruism is the dominant characteristic of all normal sentient beings, I have correlated the regnant instinct of the lowest unicellular organism with the highest attributes of an ideally perfect manhood.

Nor have I antagonized the central idea of Christian theism as it was voiced by the oldest prophets; for if there is any one doctrine that is more vital to Christianity than another, it is that man was made in the image of God. And this, I submit, could not be true if altruism were not the regnant instinct of

the human soul, or if its universality were not the ultimate goal of human progress.

And thus it happens that the central tenet of each of two supposedly antagonistic philosophies is confirmed and illustrated by one fundamental truth.

This of itself is profoundly significant; for the fact that a hypothesis is capable of harmonizing two supposedly antagonistic philosophies is a strong argument for its truth. Nor is this all. The most significant part of it is that this one instinct not only constitutes the potential energy which lies at the bottom of all physical development from the moneron to man; but it is the agency of man's mental, moral, and spiritual development from savagery to civilization, and constitutes the promise and potency of universal altruism.

CHAPTER IX.

EVOLUTION OF THE TWO INSTINCTS IN THE INDIVIDUAL.

Recapitulation. — Man's Environment of a Moral, Social, and Spiritual Nature. — Same Process of Development with Men as with Animals. — Brain Mind reasons out a Line of Conduct. — Habit converts it into a Permanent Characteristic. — It is then an Attribute of the Subjective Mind, i. e. Instinctive. — It is then Inheritable. — The Warfare between Reason and Passion. — Not for the Suppression of Passional Emotions, but for their Regulation. — Reason the Judicial Tribunal. — The Sum of its Decisions constitutes the Character of the Individual. — As befits its Judicial Character, the Reasoning Mind is Emotionless. — Nevertheless it ministers to Self-Interest. — It decides upon what is Best for the Individual. — The Brain the *Novum Organum* of Animal Intelligence. — Suggestion the Executive Agency of the Judicial Tribunal. — It is the Power which invests Man with Dominion over all Animate Nature, including Himself. — Intellectual Faculties of Subjective Mind rarely appear above the Surface. — Exceptions in Genius. — Emotions, however, constantly in Evidence. — Synchronism of the Two Minds. — Facts demonstrating Duality of Mind. — Hypnotism, Somnambulism, etc. — Objective Mind not controlled by Suggestion. — Subjective Mind is so controlled except in Matters of Conscience. — Man not handicapped by a Preponderance of Evil in his Nature. — The Strongest Instinct impels to Progress. — Reason is on the Side of Right. — A Crucial Question. — Why does the Mortal Mind dominate the Immortal Mind in this Life? — The Question answered. — The Immortal, or Subjective, Mind was destined for a Higher Plane of Ultimate Existence. — Meantime Subjective Faculties must develop on this Plane. — Reason the Agency. — Thus Man was made a Free Moral Agent.

I HAVE now shown that all the emotions of the soul of man have their origin in two correlative instincts, namely; the instinct of self-preservation and the evolutionary, or altruistic, instinct. I have

pointed out the fact that under normal conditions the two are harmoniously interrelated, but that under abnormal conditions either faculty may obtain undue ascendancy, even to the total submergence of the other.

I have shown that, normally, the instinct of self-preservation is conservative and preservative; that it is promotive of a due regard for existing conditions, personal safety, and private rights; but that, abnormally developed, it leads to pure selfishness and a total disregard of the rights of others.

On the other hand, the evolutionary instinct, normally developed, is creative, progressive, and altruistic, altruism predominating. Abnormal development leads to a chronic dissatisfaction with existing institutions and to imbecile schemes for reforming them; to hysterical sympathy for criminals whose crimes are of exceptional atrocity; to suicide for the purpose of enabling one's family to realize on his life insurance; in short, to unreasoning and unrestrained excitation of the sympathetic emotions.

I have shown that between the extremes of selfishness and altruism there exists a wide battlefield for the contending emotions; that the conflict between them is incident to the transitional stage of development from primitive savagery to an ideal civilization. It is the great body of mental phenomena incident to this transitional stage that furnishes forth the *pièce de résistance* for all the feasts of reason with which philosophers and metaphysicians have been wont to regale mankind. I shall not enter that field at present except for the purpose

of a brief inquiry with especial reference to the influence of the brain mind, or objective mind, upon the development and regulation of the two instincts which we have been considering.

I have already endeavored to show that the brain is simply a highly specialized physical organ, especially adapted to the exigencies of a physical environment, and that it was developed in response to the growing necessities of animal life, just as, under other conditions, weapons of offensive and defensive warfare were developed. I have shown that the brain performed its functions largely by the process of developing secondary instincts; that it was constantly stimulated to increased efficiency by contact with ever-increasing complexities of constantly changing environmental conditions; and that it thus became in man the dominating factor in the dual mental organism. I shall now attempt to show that man's mental, moral, spiritual, and social development is brought about by precisely the same agencies, operating by the same processes that developed animal intelligence after the brain became a factor in mental evolution. There are differences, of course; but they are of degree, proportion, and subject-matter. That is to say, there is a difference of degree in the development of the objective mind, there is a difference in the proportional development of the two minds, and there is a difference in subject-matter in that the environmental conditions, which stimulate the growth and progressive development of man, are largely of a moral, intellectual, and spiritual nature. But the processes are fundamentally identical.

Thus, when an animal is confronted by a new en-

vironment, involving new problems of subsistence and new dangers to be encountered, its inherited instincts are at fault ; and hence it " acts intelligently," as the naturalists say. That is, it reasons out the problems presented and acts accordingly. In other words, the objective, or brain, intelligence performs its functions and directs a line of conduct adapted to the exigencies of the case. Then, if the conditions are permanent, the intelligent act becomes habitual, and finally, " after being performed for several generations it is converted into a permanent instinct, and is thereafter inherited."

When new problems are presented to man, the process and the result are the same. For instance, a question involving the principles of right and wrong presents itself to the objective, or reasoning, mind. It may be a question involving the personal welfare of the individual, or it may involve his emotional nature. It may be a question of religious duty, or it may involve his obligations to his family, the community in which he resides, or the state which claims his allegiance. In either case there may be conflicting interests, emotions, or passions to reconcile, regulate, or restrain. The untrained passions of the animal or the primitive man, with correspondingly feeble reasoning powers, would quickly decide in favor of sensual gratification, unless restrained by an obviously imminent danger. But the man whose reason is trained and developed may yet be beset by strong emotions, passions, interests, or desires that conflict with what reason prescribes as a duty to himself, to humanity, or to God. Then ensues the great conflict of which Paul complains, — " the law in his members

warring against the law of his mind." Every normal man is called upon to experience this warfare between duty and desire, between right and wrong. Normally conducted, it is a conflict, not for the destruction of the emotional nature of man, not for the elimination of the passional element from his soul, but for the regulation, elevation, and purification of that element and directing it into legitimate channels of normal activity.

It is the office of reason, the function of the objective mind, to decide the contest, and just in proportion to the relative strength of the reasoning powers as compared with that of man's selfish emotions, will the decision be on the side of right as against wrong.

Reason, therefore, is the judicial tribunal of the soul; and when its decision is made in any case of conflict, a course of conduct is entered upon in accordance with that decision. And it is the aggregate of these decisions that constitutes the character of the individual. Whatever the course may be, when it becomes habitual, and when it is persisted in for a few generations, it is converted into an instinct and is then inherited. In other words, another secondary instinct is thus created, which adds its quota to the sum of the faculties of the subjective mind.

It must not be forgotten, in this connection, that while the objective mind is cold and emotionless, as becomes its judicial function, it is, and has been from the beginning, identified in its judicial capacity with the instincts of self-preservation and appetency, or the evolutionary instinct. As we have already seen, it is the source of secondary instincts alike in animals and in man. That it is the source of all progress in

the sciences and the appliances of civilization, is a matter of common observation. It follows that its constant aim is to do the very best it can for the preservation and progress of humanity. Its judgment may sometimes be wrong, but that it is generally right is evidenced by the giant strides which civilization has made since Bacon formulated the function of the brain and reduced its process of reasoning to a system.

Nor must it be forgotten that this judicial tribunal of the dual mental organism is not destitute of an executive agency to enforce its decrees. That agency is what is known to science as the law of suggestion. The power of suggestion is the most potent mental energy with which man is endowed. Its influence is felt in every department of human activity. It is the instrumentality of universal education. It is the power that invests man with dominion over all sentient creatures. It is, in short, the instrumentality through which the mind of reason is enabled to educate and discipline the soul for weal or woe in this world and the world to come.

I repeat, therefore, that the objective mind, the mind of which the sole function is that of inductive reasoning, is the judicial tribunal—the court of Oyer and Terminer—which hears and determines all questions pertaining to the welfare of man in this life. When properly cultivated, it sits in judgment upon every act of our lives, regulates every emotion, restrains every passion, and directs it into legitimate channels. In short, it is at once the tenure by which man holds his free moral agency and the power that enables him to fit his soul for eternity.

But, as before remarked, an agency was necessary to enforce the decrees of the tribunal of reason upon the mind of the soul. This was rendered possible by the limitations of the subjective faculties. This limitation, as I have before pointed out, consists of the absence of inductive power in the subjective mind. It was, indeed, this limitation that rendered a brain necessary as a part of the physical organism, and under the law of appetency it was this necessity that impelled its development. When the brain was developed, it swayed the dominant mental energy by virtue of its power to reason, and its consequent ability to take the initiative in those intelligent actions that were rendered necessary from time to time in consequence of constantly increasing complexities of environment. The subjective minds of the lower animals were therefore dominated by the suggestions of their objective minds, precisely as the subjective mind of man is now controlled. In fact, the supremacy of suggestion was even more perfect, theoretically at least, with animals than with men, for the reason that all intelligence in animals pertains to self-preservation and evolution. The objective intelligence therefore ministered to the wants and necessities and propensities of animal nature just the same as it contributed to its safety.

But with man it is different. Questions of morality, ethics, and religion occupy man's attention, and require the restraint or regulation of the animal propensities. Hence it is that the control by the power of suggestion is not so easy and certain in man as it is in animals. Nevertheless, the subjective mind of man is limited by the same absence of inductive

powers, and the law of suggestion prevails. Hence the frequent contests for supremacy between the two minds,—the mind of reason and the mind of emotion, the mind of judgment and the mind of passion.

It may be here remarked that this contest has been experienced by every normal man and every normal woman of mature years. It is the one phenomenal manifestation of duality of mind that is experienced, under normal conditions, by everybody. The other faculties of the subjective mind are less in evidence. The purely intellectual faculties, for instance, rarely appear above the threshold of normal consciousness. They sometimes appear in cases of genius; but as Lombroso,¹ more clearly than any one else, has pointed out, genius itself is intensely abnormal. The same may be said of the faculties of telepathy and telekinesis, modified only by the character of the manifestations and the nature of the abnormality.

But the emotions are constantly near the surface, so much so, indeed, that some of those who adhere to the dual hypothesis are inclined to the opinion that the objective mind itself is endowed with emotional faculties. This, however, is an error that will be made obvious by a moment's consideration of the salient facts.

Thus, to locate the emotions in the reasoning mind would be to handicap it with that which would limit if it did not destroy its "judicial independence." This, on the principle of adaptation of function to purpose, which prevails in all nature, would be a sufficient reason for keeping the judicial mind free

¹ See "The Man of Genius."

from the influence of selfish emotions. This, however, is merely a reason why the emotions should not be located in the reasoning mind. But it should not be forgotten that, in all of nature's laws, that which should not be is not, and that which should be is. We may rest assured, therefore, on *a priori* grounds, that nature's mental tribunal, which was so obviously instituted for the purpose of providing a guide and a mentor for the body and the soul in their journey through the dangers and temptations of earthly existence, is not handicapped by faculties that would preclude the possibility of a dispassionate performance of its functions.

The facts bearing upon the question are many, prominent among which are these: The crucial fact is that the emotional faculties antedated the brain by many millions of years; and since no member of the old school of psychology has been able to tell us when or by what process they were transferred to the new organ, we are justified in assuming, on *a priori* grounds, that the transfer has never been made. Logically, therefore, we have a right to hold that position until the contrary has been demonstrated; or at least until such *a posteriori* reasons are advanced as will show the position to be untenable. But it happens that the latter all conspire to sustain the position. For instance, the warring of the parts, from the agonies of which St. Paul prayed to be delivered, or the conflict between reason and passion of which we have already spoken, presents indubitable evidence that two distinct mental organisms, actuated by antagonistic motives, are contesting for supremacy.

Again, the facts of suggestion demonstrate the principle of duality. Thus, normally the brain mind, or objective mind, controls the subjective mind, including the emotions, just in proportion to the comparative development of the two. But when the action of the brain is inhibited, as in hypnotism, the emotions can be controlled by the suggestions of another. And this may be done even against reason, experience, or the evidences of the senses. The only exception to this rule is when the suggestions conflict with conscience. Of this more will be said hereinafter. Now, the fact that the emotions can be controlled by suggestion under any circumstances so far as to nullify the facts of experience, is indubitable evidence that they belong to the subjective mind. And when to this is added the correlative fact that the reasoning, or objective, mind is not and cannot be so controlled; but that, on the contrary, it normally has the power to control the subjective mind by suggestion, we have an overwhelming array of evidence that the two minds are distinct organisms, possessing independent powers, operating by diverse methods and differentiated by distinctive limitations.

It will now be seen that in the great conflict between evil and good, in the great struggle between right and wrong, man is not handicapped by a preponderance of evil in his nature. On the contrary, the strongest instinct of his soul impels him forward in the path of progress toward a realization of the highest ideals of the Master, and reason is on the side of right.

In this connection it has often been asked why it is that the subjective mind—the mind of the

immortal soul—is subordinated to the mind that perishes; why it is that it is limited in its reasoning powers,—why it is dominated and constantly controlled by the power of suggestion. These are pertinent and far-reaching questions; and if they could not be answered clearly and definitely, and the methods of control and the processes of training and development clearly pointed out, the hypothesis would be unworthy of a moment's serious consideration.

In attempting a reply to these questions we must premise that, the foundation having been laid by the facts and arguments in the foregoing chapters, what follows will be largely in the nature of a statement of conclusions.

In the first place, it must be remarked that, since God's method of creation is by a process of progressive development in accordance with an immutable law, and since it is evident that man is the final goal of organic evolution, it follows that the potentialities of manhood were necessarily inherent in his primordial ancestry. That is to say, every essential faculty of the subjective mind of man existed, inchoate and potential, in the mind of the lowest unicellular organism; and after the brain was evolved, every faculty, objective and subjective, that man possesses thus existed in all his ancestry that were endowed with brain faculties. No evolutionist will gainsay this proposition; for it is the essential implication of the evolutionary hypothesis.

It follows that all the animal passions and propensities are the inalienable hereditaments of man. After what has been said in preceding chapters, however, the statement will not seem so shocking as the

words might seem to indicate; for it is now evident that what we have been in the habit of stigmatizing as the "lowest instincts" of animals is primordial altruism; and that these same instincts, when normally developed, refined, purified, elevated, and directed by an enlightened conscience into legitimate channels in man, are converted into the noblest impulses, and are promotive of the highest and purest altruistic devotion of which the souls of men are capable. Man need not, therefore, be ashamed of the mental attributes of his humble ancestors, since his noblest faculties were inherited from them, and the quality, character, and value of the heritage depend upon his own volition,—depend upon the use he makes of it. The parable of the talents is directly in point; and it is one of the finest illustrations of the wisdom of the Master that have been handed down to us.

Here, then, we have two facts to correlate. The first is the fact that the faculties possessed by man existed, inchoate, in the lower animals. The second is that the subjective mind of each is limited by the law of suggestion; or, what is an equivalent statement, it is incapable of inductive reasoning.

Now, the first explanation that the inquirer will demand is, Why is the subjective mind thus limited in its powers? To that question only a provisional answer can be made in this immediate connection; namely, that it appears to be because the subjective mind or entity was designed for a higher ultimate destiny; and hence only such faculties were given to it as would be useful in that higher plane of existence. Hence inductive powers were not given to it, for the reason that such a faculty would be useless

to a being who is endowed with the power of intuitive perception of the laws of its being, or, in other words, of all essential truth pertaining to its state of existence. I have, however, touched upon this topic in earlier chapters of this book, and have treated it more fully elsewhere.¹ It is reiterated here only for the purpose of making the present statement complete.

Be the reasons what they may, the facts remain as stated, namely, (1) that man inherited all his faculties, passions, and propensities from the lower animals; and (2) that the subjective mind is, and always has been, controlled by the suggestions of the objective mind.

Now, this control was easy and without friction so long as the whole energies of the dual mind were absorbed in providing for the necessities and avoiding the dangers incident to a purely animal existence. But when man appeared, and when, in the process of development, he emerged from a state of primitive savagery, he gradually became conscious of the fact that his environment was no longer purely physical. In other words, he gradually became conscious of his status as a moral being, having duties to perform toward his fellow-men. With that came a sense of dependence upon some higher power, together with a sense of duty or obligation to that higher power.

In short, the time came when it was necessary to restrain and control the animal passions and propensities in deference to the rights of others. And it was then that the wisdom of investing the objective mind with the power to control those passions and to

¹ For a full discussion of the subject, see "A Scientific Demonstration of the Future Life."

direct their exercise and development became manifest. In other words, it was then that the utility of the law of suggestion was demonstrated; for that is the law by virtue of which reason became normally the dominating power of the duplex mental organism. That is the law under the provisions of which mortal man was made a free moral agent; for it invests him with full power to train his soul for weal or woe for this world and the world to come.

The process by which this training is accomplished is precisely the same in man as secondary instincts were acquired by the lower animals after a brain had been evolved and become a part of the mental equipment of sentient creatures. That is to say, the instincts of self-preservation and appetency together constitute the primary impulse which actuates man substantially as it did the lower animals. The objective mind, now as then, reasons out the problems of life as they are presented, and decides upon the best course to pursue; and the subjective mind accepts the suggestion, acts upon it, and in due time the course of conduct becomes habitual, then instinctive and inheritable. Thus, the objective mind is purely utilitarian; and being devoid of emotion, it coldly reasons out the problems as they are presented, but always with an eye single to the question of benefit to the individual or the species. The subjective mind, on the other hand, accepts the utilitarian suggestion, and when the course of conduct once becomes instinctive, or, in other words, firmly fixed in the subjective mind, the impulse to carry it out is converted into an emotion, or a moral principle, or both, according to the nature of the action.

CHAPTER X.

EVOLUTION OF THE TWO INSTINCTS IN THE STATE.

The same Laws of Development prevail in States as in Individuals.

— All Aggregations have their Origin in Intelligent Appreciation of the Necessity for Mutual Protection. — Reason teaches Mutual Helpfulness and Forbearance. — Churches, Schools, and Benevolent Institutions follow in their Order. — Altruism is intelligently practised. — Habit converts it into an Instinctive Emotion. — In due Time Patriotism becomes Instinctive. — It is developed in Proportion to Beneficence of Institutions. — Foreign War the Supreme Test of Patriotism. — Capable of Indefinite Expansion. — Its Origin in Parental Instinct. — May be expanded so as to embrace all Humanity. — Its Highest Manifestations in the most Progressive Nations. — In such Nations it approaches Universal Altruism. — It becomes more than mere Love of Country. — It becomes the Missionary Agent of Christian Civilization. — Trade and Commerce its Promoters. — The Incentive to all Effort and all Progress. — It is God's Method of inciting Men to Action. — Contrast with the "Gentle Savage," who neither works nor fights. — Hunger as an Intellectual Stimulant alike with Animals and Men. — Nations must be Prosperous before they can be Altruistic. — God's Bounty from a Full Store. — Accumulations of Wealth cannot properly be discouraged, yet God requires an Accounting.

ONLY a few words will be required to show, in outline, that the principles we have been considering apply with the same force and pertinency to aggregated humanity, — to tribes, communities, states, and nations.

Thus, when states are formed by an aggregation of communities, it is the result of a process of reasoning by which the conclusion is reached that the

interests of each and all will be best subserved by a union of forces, financial and military. That is to say, the principle of self-preservation enters into the transaction in its incipency; the higher emotions having little or nothing to do with it at that time. But reason teaches them that inasmuch as their interests are identical, and mutual protection is their object, they should cultivate a mutual regard, forbearance, and helpfulness. Churches, schools, colleges, and eleemosynary institutions soon follow, with all that they imply; all being the outgrowth of an intelligent understanding of the best interests of the community or the state. In due time, however, — after these “intelligent actions have been performed for several generations, they are converted into instincts and are then inherited.” The altruistic instinct has become a factor in the national character, and it has become an emotional impulse of supreme potency. We call it “patriotism,” and define the word as “love of country.” It is that, but in its higher implications it is infinitely more; for it comprises, not only a sentimental love of one’s country, prompting obedience to its laws and to acts promotive of its welfare, but to the sacrifice of property and life itself in defence of its existence, its rights, and its institutions.

The patriotism of a free and enlightened people is, in fact, one of the best illustrations of the harmonious development of the two instincts. The self-regarding element enters into it, in that protection of the whole includes protection of its component parts; and this applies alike to life and to property. All acts having for their object a provision for the common

defence, or for the promotion of national prosperity, must be set down to the credit of the self-regarding instinct, although the altruistic element may enter into many of them. But it will invariably be found that a free and enlightened people, after a few generations of autonomous government, are more strongly moved by altruistic impulses than by those that are purely self-regarding; and that those acts which inure to the benefit of future generations far overbalance the others in number and importance. It is sometimes difficult to determine when the patriotic altruism of such a people ceases to be prompted solely by an enlightened reason and is converted into a national instinctive emotion. But the time always comes when that question is no longer in doubt; and that time is when war with a foreign nation is imminent. When such a time comes, if a thousand volunteers offer their services for every one that is called for, we may rest assured that patriotism in that country is a national instinct, and with that people altruism is the dominant national impulse. I mention war as a test of the instinctive character of patriotism, for the reason that until the representative manhood of a nation is put to that test it can never be surely known whether or not the patriotic impulse is stronger than the instinct of self-preservation. If it is, we may safely conclude that in that nation the two instincts have been harmoniously developed, and that altruism, or other-regarding, with all its implications of progressive development of civilization, is the dominating national characteristic.

Patriotism, like every other virtue, may be mis-

directed; but the fact remains that it is essentially altruistic. It is, moreover, fairly representative of progressive civilization, for it is capable of indefinite expansion, and it keeps exact pace with the development of human intelligence and national virtue. The latter proposition is demonstrated by the fact that in those nations which enjoy the highest degree of Christian civilization, and whose governments are the most altruistic, the patriotism of the people is the most intense and practical in peace and potent in war.

That it is capable of indefinite expansion is evidenced by the history of the world. Having its origin in the parental instinct, it began with the primordial cell as a primary instinct. In the process of development secondary instincts were evolved, resulting in gregarious habits in the more intelligent animals. When man appeared and began to organize the basis of human society, the equivalent of what we call patriotism was among the first of the secondary instincts developed. It had its basis in the two primordial instincts; but its first manifestations were the results of an intelligent adaptation to environment. This was eventually converted into an instinct, and became an inheritable attribute of mind.

Now, every step in the progressive development of human government is taken in precisely the same way. Thus, when tribes are aggregated into communities, it is primarily the result of an intelligent appreciation of the fact that self-preservation for the tribe and security for future generations will be best provided for by a union of forces. The same is

true of every new aggregation of interests and forces by which states and nations are formed under normal conditions. Reason points out the path of safety for present and future generations, and inculcates a policy promotive of internal harmony and mutual forbearance and regard. These are the suggestions of the aggregated national intelligence. At first, however, there are conflicting interests which give rise to local selfishness, and thus counter suggestions are made which retard the general acceptance of the situation. But in due time the interests are harmonized, and the advantages of union become manifest to all. The natural result is a growing regard for the institutions that afford protection to life and property and provide for the comfort and prosperity of future generations. And this is the emotion that eventually develops into that passionate love of country which has been designated as patriotism. The suggestions of reason have been fully accepted by the subjective mind. The resultant acts have been performed until they have become habitual. A secondary instinct has been created; and henceforth it is a potent element in the national character, and, like all other instincts and attributes of the subjective mind, it is the heritage of posterity.

It seems evident, therefore, that the higher manifestations of the attribute of mind which we call patriotism are much more than a mere emotional sentiment of love for one's country; for the latter may be inspired by the associations of childhood, by the memories of parents and the companions of youth, or even by the memories of the beautiful.

scenery of one's native land, — "the orchard, the meadow, the deep tangled wildwood," or any loved spot which one's infancy knew. No one is exempt from the emotions inspired by such fond recollections. But that emotion is not patriotism in the higher sense of the word. It has little or nothing in common with that lofty spirit of self-abnegation which prompts one to sacrifice all that he has, even life itself, for the preservation of the institutions of his country. Such a spirit can only be inspired by an intelligent appreciation of institutions that are worth preserving. Hence it is that the higher attribute of mind which is called patriotism exists as a national characteristic of the people of any country in exact proportion to the beneficence of its institutions and the ability of its people to appreciate them intelligently. When this universal truth is considered in connection with the fact that the higher patriotism we have described is in itself essentially altruistic, the conclusion is inevitable that the emotion possesses a more profound significance than is expressed or implied by the term by which it is designated. It is, in fact, the national or collective expression or manifestation of the "evolutionary instinct," the progressive principle, the constant force, the impellent energy — creative, progressive, and essentially altruistic — that developed the organic world from the moneron to man, and constitutes the motive power that impels mankind onward and upward in the path of progressive development in every sphere of legitimate human activity.

If this proposition is true, there are two evidences of its truth that we might reasonably expect to find:

First, we should be sure to find its highest manifestation in those nations that are in the very van of human progress, for there is necessarily a causal connection between them. That is to say, we might expect to find the people of those nations whose governments most clearly and practically recognize the rights of man to be the most enlightened, enterprising, and progressive in peace, and in war the bravest and the most devoted and self-sacrificing.

Secondly, we should have a right to expect that eventually this same altruistic emotion would refuse to be circumscribed by the limitations of race, color, or geographical boundaries; and that, on occasion, we should find the people of great nations moved by one common altruistic impulse to right the wrongs of suffering humanity in other lands than their own.

The impulse, it is true, might be misdirected. All missionary effort is liable to be misdirected and carried forward on impracticable lines. I am not arguing that question in reference to any real or supposable case. The point is that the impulse is real, that it is altruistic in its very essence, that its existence as an individual or a national characteristic reaches out toward universal altruism and points to that goal as the manifest destiny of humanity.

Again, it may be said that selfishness is the main-spring of missionary effort alike in individuals and in nations; that the individual missionary is inspired by a contemplation of his salary, and a nation by the prospect of increased trade and commerce. It is true that as long as man is compelled to eat in order to live, selfish considerations are liable to enter into

all human transactions, however altruistic they may be in their essential nature. That particular necessity of animal existence, however, was one of the active agencies of organic evolution; and in man it is still the primary incentive to exertion. Emerson (I think it was Emerson) once remarked that "every man is as lazy as he dares to be." He might well have added that the same is true of every sentient creature. Even the "little busy bee," who in Northern latitudes is compelled to "improve each shining hour" in order to provide food for the winter, utterly refuses to do anything of the kind after he is transported to a land of perpetual sunshine and flowers.¹ The truth of the remark, so far as it pertains to man, is illustrated by the fact that "in isolated parts of the earth, where the natural supply of food is abundant, as in sundry tropical islands of the Pacific Ocean, men have ceased from warfare and become gentle and docile without rising above the intellectual level of savagery."² It must be added that this particular gentle savage has also ceased from work, and for him a breech-clout is a wardrobe of exceptional extravagance. He is "just as lazy as he dares to be;" and he dares everything because he has nothing to lose by idleness and nothing to gain by work. He is peaceful because he has no rights worth invading. Spontaneous nature supplies his daily food. In winter he is clothed with the sun; and his summer garment is the shade of the tree that drops his daily bread into his open mouth. Of course he is gentle and docile; of course he is

¹ Romanes, *Mental Evolution in Animals*.

² Fiske, *Destiny of Man*.

lazy; of course he has not risen above the intellectual level of savagery; and of course he never will rise above that level. An exceptionally unfavorable environment has deprived him of that incentive to activity that is inspired by the instinct of self-preservation alike in the lower animals and in mankind, namely, the necessity of struggling for daily sustenance.

It is this necessity for food that causes animals and savages to fight and to work. But it is also this necessity that sharpens their wits and develops their understanding. And in the highest civilization it is still a powerful agency for the development of the human intellect; for, whilst peaceful competition in trade and commerce has largely taken the place of brute force as a means of supplying the necessities of mankind, it requires the exercise of all the powers of the mind to achieve success. The necessity for procuring subsistence, therefore, is not only constant and imperative in itself, but it compels the cultivation of the intellectual faculties; and in the larger operations of trade and foreign commerce it facilitates intercourse with the world at large and promotes harmonious foreign relations. These results, in turn, directly or indirectly, are promotive of the development of altruistic emotions in a constantly broadening field, the grand result of which must be to bring about, on a national scale, the normally harmonious relation between the instinct of self-preservation and the altruistic, progressive, evolutionary instinct that moves the world toward the final goal of universal altruism.

No; trade with foreign nations is not incompatible

with the exercise of the most exalted beneficence toward them. On the contrary, it affords the greatest facilities for the establishment and maintenance of such relations. Besides, nations, as well as individuals, must be prosperous before they can be altruistic. The instinct that accumulates provides the only means for the exercise of benevolence. The hand of Charity would be useless if it could not grasp the gifts she would bestow. The bounties which God bestows upon his children are taken from a full store.

On the other hand, it should be remembered by nations, as well as individuals, that God requires a strict accounting for the uses for which his bounty is employed, and that to whomsoever much is given, of him shall much be required.

Trade in itself, when honestly and properly conducted, with due regard to the rights of all concerned, is a happy illustration of the harmonious development of the two instincts, — the self-regarding and the other-regarding, — for whilst it furnishes subsistence for those who are engaged in it, the surplus accumulations invariably redound to the benefit of others. The accumulation of wealth, therefore, cannot properly be discouraged; but it will be a happy day for humanity when all millionaires shall hold it to be “disgraceful to die rich.”¹ It is an encouraging sign of the times that the example has been set by one who is daily giving evidence of the sincerity of his words by munificent benefactions on lines of purest altruism.

I have now briefly indicated the lines upon which nations progress from savagery to civilization, — from

¹ The words of Andrew Carnegie.

instinctive self-regarding to instinctive altruism. I have shown that nations and individuals are governed by the same psychological laws, and that those laws are the same that prevail in the life of the lower animals. The law of suggestion has been the moving agency of psychic development from the time when a brain was developed in animals until now; the process of development in animals has been by intelligent adjustments to environment, which, by being frequently performed, have become automatic in the individual, and then inherited till they become automatic habits in the race (Romanes), or, in other words, until they are transformed into secondary instincts. When man appeared he was governed by the same law of development, and his whole character is made up of hereditary instincts thus acquired, plus the sum of his individual acquirements. I have shown that the psychical character of aggregated humanity, whether of tribes, communities, states, or nations, is developed in precisely the same way and under precisely the same laws. That is to say, it has been shown that secondary instincts are formed, first by intelligent adjustments to environment, resulting in habits that eventually become converted into instincts and are then inherited, till they become habits in the state or nation; and that the tendency or trend of these developments is always onward and upward toward perfection; that in the organic world the final goal was man; that in men and nations the final goal is universal altruism. I have shown that behind this process of development there exists, inherent in all sentient creatures, from the primordial cell to man, a constant, forceful, impellent energy

that irresistibly impels all living beings forward in the lines of progressional development; that this energy is embodied, so to speak, in a primary instinct; that in its every form of manifestation, from the moneron to man, it is essentially altruistic in that it constantly prompts to acts which redound to the benefit of future generations; that it is normally paramount to all other instincts, including the instinct of self-preservation; and hence, that the most potent psychic force in nature, normally developed, irresistibly impels mankind toward the final consummation which was foreshadowed by the Man of Nazareth, — universal altruism.

It remains to show that the higher attributes of the character of man, namely, his moral and religious nature, are developed under the same laws and by the same processes that we have been considering. The next chapter will be devoted to a brief examination of that process.

CHAPTER XI.

EVOLUTION OF CONSCIENCE AND RELIGIOUS PRINCIPLES.

Normal Control of the Subjective Mind. — When Conscience becomes Instinctive. — A Secondary Instinct. — The Ultimate Instinctive Emotion of the Human Soul. — Dominates all other Emotions. — It was developed precisely the same as were all other Secondary Instincts. — It was the Result of the Inductive Reasoning of the Objective Mind. — Facts of Observation and Experience resulted in the Maxim, "Honesty is the Best Policy." — This is Mr. Spencer's Conscience. — It culminates just where Real Conscience begins. — It is the Utilitarian Conscience. — It is a Step in the Process of Development, not the Process itself. — It constitutes a Suggestion to the Subjective Mind. — The Suggestion is accepted and deductively carried to Higher Conclusions. — It is thus reinforced by every Religious Principle or Emotion. — It is further assisted by Intuition. — As with the Lower Animals, so with Man. — Every Step in Advance is accompanied by Increased Powers of Intuitive Perception of Essential Truth. — Jesus of Nazareth is an Example. — The Older Prophets. — Conscience, however, may be perverted. — Hence the Inquisition and Religious Wars; hence Cranks. — Perverted or unperverted, it is the Strongest Emotion of the Human Soul. — Perverted Conscience the Exception; hence Progress toward the Higher Altruism. — It is when Conscience becomes Instinctive that the Subjective Mind assumes the Ascendancy. — The Suggestions of Conscience overshadow all other Suggestions. — At the Threshold of the Moral and Religious Realm the Soul asserts its Normal Supremacy.

WHEN I say that there comes a time in the history of every fully and normally developed man or woman when the subjective mind rightfully and normally assumes the ascendancy, it will seem like a contradiction of what has been said of the law of suggestion and of the normal dominancy of the

objective mind under that law. It is, nevertheless, true that the time does come when the subjective mind assumes a normal and a rightful supremacy. It is not, however, an exceptional violation of the law of suggestion, but a legitimate and direct consequence of that law. The time when this psychological phenomenon is witnessed is when *conscience* becomes an instinctive quality or emotion of the individual. A very few words will make my meaning clear.

Conscience, like every other emotion of the human mind that distinguishes it from the mind of the brute, is a secondary instinct. It is, in fact, the ultimate instinctive emotion of the human mind as manifested in this life. It is, moreover, the strongest emotion of the human soul, for it is reinforced by all the higher instinctive emotions that characterize mankind in the higher stages of civilization.

And here let me say, parenthetically, that in dealing with the subject of the religious emotions I shall take as my example the normal development of conscience; and that I employ that attribute as an illustration because it is, in a sense, inclusive of all the higher emotions of the soul.

Conscience, in the ordinary acceptation of the term, covers everything in man's nature that has to do with the decision and direction of moral conduct. Ethically considered, it has been defined as "the power or faculty in man by which he distinguishes between the right and wrong in conduct and character, and which imperatively commands and obligates him to do the right and abstain from doing the wrong."¹

The latter half of this definition may be accepted

¹ Standard Dictionary.

as a sufficiently exact definition of conscience for present purposes. But the first part is descriptive of an intellectual, perceptive, discriminative power or faculty, and not of an emotion. The impulse that "imperatively commands and obligates" is emotive, and not the discriminative power that distinguishes. It is true, as we shall see later on, that the discriminative power may become intuitional, but the distinction holds good nevertheless.

The power or faculty in man which ordinarily distinguishes between right and wrong was originally purely intellectual. It was the result of long ages of observation and experience. In other words, it was the result of the exercise of the power of inductive reasoning; the observation and experience of humanity furnishing the facts from which to generalize. The grand result of this age-long process was such summations of human experience as the maxim, "Honesty is the best policy."

This is the outcome of the reasoning of the purely intellectual, unemotional, utilitarian, objective mind. It is not a great moral principle. It is not even honest. It is a cold statement of a matter of policy. It is a statement of a bald fact that can be rendered into a homelier phrase without changing its meaning in the slightest degree; namely, "On the whole, it *pays* best to deal honestly." It is the cold, calculating, commercial conscience of the utilitarian world; but it possesses no more vital honesty, morality, or religion than do the statistical tables of an insurance actuary.

It is, however, the best specimen of a conscience that is dreamed of in the philosophy of Herbert

Spencer; and he gives the maxim — “Honesty is the best policy” — as the “summation” of human experience in the moral and religious world.¹ And this conclusion is the direct and only legitimate outcome of his “doctrine of utility” and selfishness, of which I have before spoken. I do not, however, complain of Mr. Spencer’s conclusion that the maxim quoted is the utilitarian outcome of his doctrine of utility; for he is obviously right. What I do object to is his doctrine that the maxim is the summation of all religious and moral experiences. That is to say, the necessary implication of his philosophy is that all moral and religious sentiments were antecedent to the maxim. He recognizes nothing as the outcome of the maxim itself outside of its utility as a rule of civil conduct which, if followed strictly, will serve to keep men out of the penitentiary.

Doubtless the world performed many moral and religious acts before the maxim was formulated. Otherwise there would have been no means of ascertaining the comparative utility of good and bad actions; and the agnostic world would still be in doubt as to which would pay the greatest dividends “in the long run.” But Mr. Spencer stops with the maxim. It is, in his philosophy, the grand summation of moral and religious experiences. It is the “conscience” of the Spencerian philosophy, if indeed that great philosopher can be said to have recognized the existence of such a faculty in the human mind. It must be presumed that he did not, since the word itself does not appear to form a part of his psychological vocabulary.

¹ Principles of Psychology, part ix. p. 620.

However, it does not appear that he recognizes any higher standard of morality or of religion or of altruism, or of human conduct in any of the relations of man to his fellow-men or to God, than that embraced in the maxim. It is, indeed, impossible that the philosophy of selfishness and the doctrine of utility should lead to any other than a selfishly utilitarian generalization. From his viewpoint, therefore, Mr. Spencer is logically right in his induction.

But, like most of the other "great principles" of the agnostic philosophers, the maxim in question is not a principle, or a law of nature, in the proper acceptance of the terms. Like natural selection, it is *incidental* to the great law of evolutionary development. It marks a step in the process of progressive psychological development, and not the consummation of that process. The great psychological consummation of the evolutionary process is universal altruism, another name for which is universal honesty, — not the honesty that is instigated by motives of policy; not the honesty that is based upon careful estimates of comparative chances for realizing dividends, not the honesty that finds its inspiration in the statistical tables of a moral actuary; but an honesty that is instigated by an instinctive love of right because it is right, by an intuitive apprehension of the eternal principles of right, by an irresistible impulse to do the right and abstain from doing the wrong. In short, the final goal of psychological evolution is the development in man of a conscience.

Now, as before remarked, conscience is a secondary instinct; and it is developed precisely as all other

secondary instincts are developed. That is to say, the first step is an intelligent adaptation to environment. The resultant acts constitute suggestions to the subjective mind. These suggestions are accepted, and the acts gradually become habitual, then automatic, and are finally converted into inheritable instincts.

The process of developing an instinctive conscience is precisely the same in principle. It is much more complicated, and it consumes a greater amount of time, owing to the infinite complexities of man's environment. But the processes are psychologically identical.

Thus, since the advent of civilization, the environmental conditions to which man finds it necessary to adapt himself are largely of a moral, ethical, and religious nature. In his dealings with his fellow-men he is constantly confronted with conditions that render it necessary to decide questions of right and wrong and to choose intelligently between the two. In other words, the cool, calculating, utilitarian objective mind has been engaged, since the dawn of civilization, in a process of inductive inquiry having in view the solution of the question as to what it is best for man to do when he has the power of choice between evil and good, between honest dealing with his neighbor and selfishness and wrong. The result of this age-long induction has been formulated by people of the higher civilization — that is, by those who have had the benefit of the greatest range of observation and experience — in some such generalizations as "Honesty is the best policy."

This, as we have already observed, is the *Ultima*

Thule of psychological development in the moral and religious worlds, according to the Spencerian philosophy. It is the conscience of the doctrine of utility. Here, then, we must part company with Mr. Spencer and his worshippers; for here is the very beginning, the primary step, toward the development of a true conscience.

The intelligent reader has already anticipated me when I say that in the process of adapting himself to his environment, social, political, moral, and religious, man has reasoned up to the conclusion embraced in the maxim; and that that and kindred summations of intelligent observation and experience constitute suggestions to the subjective mind; and that the resultant acts, at first intelligent and deliberate, afterwards become habitual and automatic in the individual, and are finally converted into instincts. And I may here remark, parenthetically, that this is the only possible process by which conscience can become hereditary; for it is only those qualities of mind that become what we call, for the want of a better term, "instinctive," that are inheritable. In other words, it is only those qualities or faculties of mind that become incorporated into the subjective mind that become inheritable characteristics of a race or species. This is as true of the higher qualities of mind as it is of the instincts of the lower animals.

Hence it is that when conscience becomes instinctive it becomes in the highest degree emotional; and it is a matter of common observation that when highly developed, and especially when it is reinforced by other instinctive emotions, it is the

strongest and most powerful emotion of the human soul.

The process of development is easily understood by those who have followed me in the earlier chapters of this book. As already pointed out, the utilitarian suggestion that honesty pays best in the long run is instantly seized by the subjective mind. But that suggestion is of small moment in itself compared to the deductions derivable from it. It must be remembered in this connection that, whilst the subjective mind is incapable of inductive reasoning, its deductive powers are potentially perfect. That is to say, it cannot institute an independent system of gathering facts from which to reason up to general principles; but once a general principle is established and conveyed to it by suggestion, it will reason deductively from that principle to all legitimate, logical conclusions with inerrant exactitude.

Now, the general principle in the case under consideration is embraced in the maxim quoted above. It is a natural deduction to generalize the principle still further into "It is always best to do right." It is but a matter of deduction to infer that since it is always best for man in this world to deal honestly with his fellow-men, it must also redound to his benefit in the world to come. Thus, the instinct of self-preservation is appealed to, first, in the maxim itself, which pertains to this world, and, secondly, in the deduction, which pertains to the next.

Again, it is but a matter of deduction to infer that since it is always best to do right, it must be because it is pleasing in the sight of God; and thus the instinctive conscience is strongly reinforced by the instinct of religious worship.

I have already spoken of the evolutionary or altruistic instinct as being normally stronger than the instinct of self-preservation. It is a matter of the most obvious deduction to correlate conscience with altruism and thus unite two of the strongest impulses of the human soul.

Again, I have shown elsewhere that when one faculty of the subjective mind is excited to activity it naturally tends to stimulate all its correlative faculties. So true is this that it has passed into a proverb, "Pity is akin to love." It has also been noted by many philosophers that religious revivals tend to the excitation of other than purely religious emotions. All these apparent anomalies are easily explicable on the theory that all the emotions, when normally developed and unperverted, are purely altruistic in nature and function, and are therefore so intimately interrelated that the excitation of one emotion stimulates all its correlatives, especially where there are two or more coexistent causes of excitation. Thousands of illustrative examples will be recalled by every intelligent reader, especially if he is acquainted with the abnormal tendencies often exhibited by psychics. This, however, is foreign to my present purpose, and it is only mentioned for the purpose of illustrating my meaning when I say that the excitation of one faculty or emotion of the subjective mind naturally tends to stimulate all the other faculties that are interrelated.

When, therefore, conscience becomes an active principle in the subjective mind, it stimulates every emotion or faculty that is concerned with questions of right or wrong in human conduct. Now, the one

great faculty of the subjective mind that is the normal correlative of conscience is the faculty of intuitive perception of essential truth or first principles. By essential truth I mean the truth that it is essential for each sentient creature to know relative to the laws of its being. This knowledge is supplied by instinct, and it exists in the subjective mind of each sentient being, from the moneron to man; and it is exactly proportioned in each to its stage of development and its consequent needs.

When, therefore, man becomes highly developed, morally and religiously, and conscience has become an active principle in his subjective mind, the faculty of intuitive perception of essential truth is developed in exact proportion. Were this not true, man, especially highly developed man, would constitute an exception to the general law. We know that it is true of the lower animals, from the primordial cell upward. We know that man is descended from the lower animals, and that the laws of his growth and evolutionary development are identical with those of his humble ancestry. Besides, we are not without examples attesting its truth in relation to man. The Great Exemplar was, of course, Jesus of Nazareth. His conscience was, without doubt, developed in absolute perfection. And we know now that his intuitive knowledge of the laws of the human soul, including the great principles of right and wrong, was correspondingly exact. I say we know this, because modern science is powerless to disprove one essential tenet of his doctrine. It can only confirm. Other great exemplars are not wanting, differing widely in degree, but attesting the soundness of the

principle. Some of the old prophets were highly endowed with the powers of intuition, as shown by the wonderful accuracy of some of their previsions. Nor are modern instances entirely wanting. This, however, is not the proper place to discuss this branch of the general subject in detail. It is introduced here merely for the purpose of completing my outline sketch of the process by which conscience is developed in normally constituted men and women; and to show what a strong moral energy is resident within the man in whom conscience has been developed on lines of perfect truth.

I am speaking, of course, of the normal method of developing conscience in the normal man. Conscience, however, like every other faculty or quality of the human mind, may be perverted by wrong education or an unfavorable environment. The Inquisition was the result of perverted conscience. Religious wars are frequently the results of perverted or unenlightened conscience. In every-day life, among highly civilized peoples, perverted conscience often manifests itself in the utter inability of certain classes of people to adapt themselves to their environment. Thus, the cranky reformer, the fundamental tenet of whose creed is that "whatever is, is wrong," is often merely a victim of a perverted conscience. It sometimes amounts to a moral insanity that is just as pronounced and often as offensive as total depravity.

But, perverted or unperverted, conscience is by far the strongest emotion of the human soul; for the veriest physical coward will often face the cannon's mouth for conscience' sake, even in a bad cause.

Fortunately for humanity, perverted conscience is

the exception rather than the rule. Were it not so, mediæval conditions would still prevail. More fortunate still it is for humanity that the inherent strength and energy of conscience as an agent of progressive development of the good there is in man, depends entirely upon the character of the correlative emotions and faculties that are concerned in its development. Thus, if one's conscience is based entirely upon the instinct of self-preservation, — that is to say, if fear of punishment for wrong-doing is the only incentive to right living, — it is an imperfectly developed conscience, if indeed it can properly be designated as conscience. The same is true even if it is reinforced by the instinct of religious worship. Again, a conscience that is based entirely upon the altruistic instinct or emotion is still lacking in some of the essential elements of a perfectly developed conscience.

I assume that in all the cases above mentioned there is still lacking an essential element, for one very good and, as I think, sufficient reason; and that is that history does not furnish an example where such partial developments were materially assisted by intuition. On the other hand, we have numerous examples, culminating in Jesus of Nazareth, where a conscience based upon a harmonious development of the three great instincts — namely, the instinct of self-preservation, the altruistic instinct, and the instinct of religious worship — was reinforced by an intuitive perception of the eternal principles of right and wrong.

Now, I have already pointed out the fact that each sentient creature is endowed with an instinctive or

intuitive knowledge of the laws of its being, and that this knowledge is exactly proportioned to its stage of mental or physical development, or, in other words, in exact proportion to its wants and necessities. I have also shown that man constitutes no exception to this rule. It is also true that this instinctive knowledge is never attained in advance of conditions that render it necessary.

We have a right to expect, therefore, that when the process of developing man's moral nature commences, and the proper stage of development has been reached, his intuitions will be developed in exact proportion to his needs. Accordingly we find that, in the evolution of conscience, at a certain, definite stage of that evolution, man does develop the power of intuitive perception of the essential truth pertaining to conscience. Obviously the only general truth answering to the necessities of conscience is that embraced in the principles of right and wrong. That is the knowledge required to enable man to perform all his duties in perfection. We further find that man never attains that intuition until he seeks to develop his conscience upon the basis of the three primary instincts, never excluding or subordinating that of religious worship.

The inevitable inference is, man owes duties to his God as well as to his fellow-men and to himself, the last-named being always subordinate to the others; and that a perfect conscience must be based upon those instincts which include all three lines of duty.

It is obvious that any one of the three instincts would be sufficient to convert the principle involved in the suggestion into an instinctive impulse of dom-

inating potency. But when the three are combined, as they are in every normally constituted person, conscience becomes an instinctive emotion of such supreme power that the gates of hell cannot prevail against it. It is then the strongest instinct of the human soul. Then it is that men will face the cannon's mouth for conscience' sake. Then it is that men and women will welcome torture and tribulation in this world, and calmly yield up their lives at the stake rather than surrender the convictions of conscience.

Thus it is, and then it is, that the subjective mind of man, for the first time in all its history, rightfully and normally assumes the ascendancy. It is not because the law of suggestion has been suspended or modified, but because the auto-suggestions of conscience are more potent than any suggestions that can be brought to bear against its convictions. This is the safeguard which the laws of nature throw around every human soul that is possessed of a conscience, and which forever guards and protects it, under all circumstances and conditions, from the suggestions of crime or immorality.

It will thus be seen that at the very threshold of the moral and spiritual realm the soul stands ready to assume its rightful supremacy. It is its own domain, its native realm, for it extends over from time to eternity; and the soul alone is concerned with both. It is then that the soul becomes the "inward monitor," the "still small voice" which leads mankind in the ways of truth and righteousness.

Part II.

PSYCHOLOGY AND CHRISTIAN THEISM.

Part II.

PSYCHOLOGY AND CHRISTIAN THEISM.

CHAPTER I.

PRELIMINARY.

Facts of Evolution to be distinguished from Theories of Evolutionists. — Theistic Argument, *per se*, to be based upon Facts presented by Antitheistic Evolutionists, — Darwin, Haeckel, and Romanes. — Their Arguments for Evolution to be utilized as a Basis of Theistic Conclusions. — Exception to be taken to Subsidiary Hypotheses. — Distinction to be drawn between Theisms. — Theism, *per se*, proven by Facts of Evolution. — Christian Theism by Evolution and Psychology. — The World interested alone in Christian Theism. — Is Christian Civilization founded on Truth or Error? — The New Psychology a Necessary Factor. — The Old Psychologies Inadequate to a Solution of the Problem.

IN order that there may be no misunderstanding either on the part of the general reader or of possible atheistic critics, I desire to have it clearly understood at the outset that the theistic argument which follows will be based upon the *facts* of organic and mental evolution as stated by Darwin and his followers. Among the latter I desire to make particular mention of the names of Haeckel and Romanes; of the former because (1) he was a follower of Darwin, (2) he was indorsed by Darwin in the later editions of his works, (3) he treated the subject

of man's evolution more fully than did Darwin, and (4) because he was more radically atheistic in his *expressed* conclusions than was Darwin himself. I mention Romanes for practically the same reasons. He was a follower and an intimate personal friend of Darwin, and his views at the time he wrote the works from which I have quoted were as pronouncedly atheistic as were those of either Darwin or Haeckel.¹

I am thus particular in segregating the facts stated by the evolutionary philosophers from their theories or hypotheses for the reason that I accept their facts and shall base my argument upon them. I also accept and shall insist upon the general theory that man is descended from the lower animals; that the potentials of manhood resided in the primordial cell; that all instincts, primary and secondary, are inherited as long as they are useful; and finally, that man is the *summum bonum*, so to speak, of all ancestral forms and faculties, — the final goal of organic evolution.

These are the principal and the valid claims of the evolutionists, and those claims I shall steadily insist upon. I shall also accept as valid their principal arguments in favor of the general theory of evolution. I shall lay great stress, for instance, upon the doctrine of heredity; and I shall particularly insist upon the entire validity of their analogical ar-

¹ In justice to the memory of Romanes I must not omit to mention that his most pronounced atheistic views were expressed in a work published anonymously, entitled "A Candid Examination of Theism," by "Physicus." In later years, however, he modified his views as therein expressed, and his notes were published posthumously under the title "Thoughts on Religion." Candor compels the remark, however, that, from a purely scientific point of view, his recantation is as valueless as his original arguments.

gument from the ontogeny of the germinal cell of man to the phylogeny of the primordial germ. As this argument is their stronghold, being absolutely invulnerable in itself, atheism could ask no greater concession than its acceptance by theism. It will thus be seen that I propose to accept, without qualification, all that is really fundamental in the theory of evolution, both of fact and of argument. I do so for two very good and sufficient reasons; namely, first, because they are right, and secondly, because they are exactly suited to my purpose.

But when we come to the subsidiary hypotheses of those scientists, vastly different questions present themselves. For instance, the theory of natural selection cannot be received without some qualification, as I have already pointed out. I have also ventured to criticise other subsidiary theories of Mr. Darwin and his followers, and it is for this reason that I wish to remind the critical reader that the validity of the theistic argument which I am about to make will not rest upon the soundness of my position where I have taken issue with those eminent gentlemen on minor propositions. The point is that I expect to make my argument complete as a refutation of their atheistic conclusions without the necessity of employing other facts or other arguments than their own. This may sound paradoxical; but the intelligent reader will understand my meaning when I say that I shall simply take up their facts and their arguments at the point where they abruptly stop and beg the question at issue, and carry said facts and arguments to their legitimate and logical conclusion.

I make these remarks at this time simply because I am aware of the propensity so often indulged by a certain class of agnostic philosophers to raise new or collateral issues when they fail to meet the real question. I wish therefore to direct the attention of such philosophers to the argument based upon their own data, and thus afford them the opportunity to wrestle with that, before they assume, *a priori*, that I am wrong because I differ with Darwin and his worshippers on collateral issues.

It is not because I fear, or expect to escape, or wish to avoid criticism for venturing to entertain views of my own in regard to those issues, that I have made these remarks. It is simply because I desire the reader to distinguish carefully between those arguments that are founded upon my dicta or hypotheses and those founded upon the facts and arguments furnished forth by my opponents. If that distinction is carefully borne in mind, it will be found that the theistic argument, *per se*, is complete without taking my own theories into account.

But it must not be forgotten that it is one thing to prove theism, or the existence of an intelligent Great First Cause, as an independent proposition, and quite another to prove Christian theism, or the existence of the God of Christian faith, as distinguished from all other theistic hypotheses. The first, as I shall proceed to show in subsequent chapters of this book, is easily proven by the aid of the facts of organic evolution, as set forth by the atheistic evolutionists themselves. But Christian theism is not so easily proven, inductively, without the aid of the new psychology.

Nor is the world at large very much interested in the first, for the great bulk of mankind believes in some form of theism. Even the agnostics are compelled to admit that the universe appears to be governed by some kind of intelligence; but hold that it can bear no relation to insignificant man, and that, whatever it is otherwise, it is "utterly inscrutable" to man.

Christianity, on the other hand, teaches that we should seek God, if haply we "might feel after him, and find him, though he is not far from each one of us: for in him we live, and move, and have our being; . . . for we are also his offspring."¹

It follows that we may *know* something of One who is so near to every one of us; that he is not "utterly inscrutable;" that if we are his offspring, we may not only trace our pedigree back to him, but by an analysis of the mind nearest to him, and continuing that analysis to the mind of man, we may know something of the attributes of him from whom we are descended.

The world is interested in this form of theism; for it is of the last importance that it should know whether or not the religion which bears a causal relation to the greatest civilization on earth is founded upon a fundamental truth. And it looks to inductive science for a solution of the problem. It is this form of theism that it is the object of this book to examine.

And this is why I have taken the pains to outline the fundamental principles of the new psychology, and to correlate them with the facts of organic evo-

¹ Acts xvii. 27 *et seq.* (St. Paul).

lution. For if Christian theism is destined ever to be established by induction, it is obvious that it can be done only by a study of the facts and principles of these two sciences.

And that is the reason why I have asked the reader to bear the distinction in mind. Theism is easily proven by the facts of organic evolution alone. Christian theism requires the aid of a true psychology. I have ventured to offer my own psychological hypotheses, for the reason that they seem to harmonize all the facts of organic and mental evolution with the essential principles of Christian theism. This the old psychology could not do; and the new physiological psychology does not touch the question. Under the old psychology any possible conception of the attributes of God based upon the known powers of the mind of man could not escape the charge of the crassest anthropomorphism. I shall attempt to show that under the new psychology, as outlined in this book, the highest possible conception of the attributes and powers of the Deity may be gained by an analysis of the known powers of the subjective mind of man.

CHAPTER II.

THE GREAT ATHEISTIC PETITIO PRINCIPII.

Logical Cobwebs to be cleared away.—The Real Question: Is there a Personal Deity?—Anthropomorphism not Chargeable under New Psychology.—The Service rendered by Evolutionists.—Refuted Doctrine of Special Creations, and then said in their Hearts, "There is no God."—Mr. Darwin's Great Labor directed toward Atheism.—Entitled to Credit for proving Evolution.—Natural Selection as the Origin of Species not sustained by Facts.—Artificial Selection produces New Morphological Species, not Physiological.—Examples.—Huxley takes this View.—Proof of Natural Selection lacking.—The Theory clung to by Atheism, because it disguises the Theory that Physical Organism antedates Intelligence.—This is the Stronghold of Atheism.—It is assumed without Proof, which is begging the Question.—Theory of Spontaneous Generation without One Fact to support it.—All Known Facts against it.—Haeckel assumes it confessedly without Facts.—Begs the Question.—Tyndall's Experiments failed to produce Organic Life from Inorganic Matter.—The Crucial Point at the Beginning of Organic Life.—Natural Selection the Theory of Chance.—Lamarck's Theory of Appetency.—Darwin's Contempt for Lamarck because his Theory presupposed Intelligence as the Cause of Organism.—"It implies Necessary Progression."—"A Wretched Book."—Darwin's Private Religious Views.—Lamarck's Theory complementary to Darwin's.—Huxley's Latest Views.—They indorse Lamarck's Theory.—Haeckel *vs.* Haeckel.—The Scientist *vs.* the Atheist.—The Moneron demonstrates Mind as Antecedent to Physical Organism.—The Monera are Structureless, and yet they are endowed with Mind and Life.—A Wonderful Intelligence.—His Theory itself a Case of "Spontaneous Generation."—The Moneron as a Symbol and an Example.—Symbolizes the Whole Process of Evolution.—An Example of Creative Power, of Control of Mind over Matter, of the Immanence of the Soul in the Body.—Its Independence of Organism, of a Law of Infinite Reproduction.—Haeckel's Assumption begs the Question at Issue.—

It is in Defiance of all Facts and Recognized Principles. — Atheism based upon Pure Assumption. — The Theories of Darwin and his Followers are Atheistic. — Their Facts are Theistic.

BEFORE proceeding to the main argument it is desirable to clear away a few of the logical cobwebs with which the agnostic philosophers have so ably obscured the question of theism as it is affected by the facts of evolution. In doing so, there will be no difficulty in showing that they have never treated the real question logically or even fairly. The real question is whether there exists an intelligent, personal Deity. The word "personal" is here employed for the want of a better term. If intelligence is granted, it presupposes a living, thinking, percipient entity,—a mental organism; and an organized intelligence must be in some sense a personality. Therefore an intelligent God must be a personal God. The word "personal," as applied to the Deity, has been a *bête noir* to atheistic philosophers for many centuries, simply because they have chosen to assume that it implies anthropomorphism. This assumption was not wholly without warrant under the old psychology; but before this book is finished it will be shown that personality does not necessarily imply anthropomorphism; and that the Christian doctrine that man was made in the image of God may be scientifically exact without being inconsistent with the highest possible conception of a Deity. In short, it will be shown that the crude and anthropomorphic conceptions of God which were based upon the assumption of the divine pedigree of man were only possible under the old psychology. This, however, must be reserved for its proper place in

future chapters. We will now proceed to examine the logical attitude of those agnostic philosophers who imagine that they have eliminated God from the universe, or, to put it in the language of Romanes, that there exists no logical "necessity for a God."¹

At the outset due credit must be awarded to the authors of the evolutionary hypothesis for the one great service they have rendered to humanity and to the cause of science and religion. They have logically and scientifically demonstrated that evolution is God's method of creation. That is to say, they have effectually disproved the old doctrine of special creations. In doing so, they have, unintentionally it would seem, done more for the cause of true religion, more to demonstrate the existence of, and the logical necessity for, an intelligent, personal Deity, than the old doctrine of special, miraculous creations has ever done.

But it was at this point that they made their first great logical mistake. They imagined that, since they had done away with the doctrine of special creations, they had also done away with the Creator, or at least had obviated all logical necessity for a Creator. Upon what principle of logic such a conclusion was thought to be legitimate, it would now be useless to inquire. It is sufficient to know that Mr. Darwin and his followers arrived at that conclusion, although they attempted in various ways to disguise it. At any rate, his efforts were in reality directed more specifically and pronouncedly toward the atheistic argument than they were towards the proofs of any other one of his theses or hypotheses.

¹ A Candid Examination of Theism.

The theory of evolution by itself could have been demonstrated to be true with half the labor that Mr. Darwin bestowed upon "The Origin of Species." The facts of paleontology alone would have been sufficient. In point of fact, as Mr. Huxley has pointed out, "primary and direct evidence in favor of evolution can be furnished *only* by paleontology."¹ Moreover, one half the facts of biology cited by Mr. Darwin would have been sufficient to make a *prima facie* case in favor of the evolutionary hypothesis; and it could have been done without committing its author to a theory of causation that he has been utterly unable to sustain. Besides, the moment the doctrine of evolution is established, its opposite, the doctrine of special creations, falls of its own weight.

We may therefore concede, for the sake of the argument, that Mr. Darwin is entitled to the credit of making a *prima facie* case in favor of the evolutionary hypothesis; and that, in so doing, he has annihilated the doctrine of special creations. I say we may concede that much; for his facts, properly classified and examined, *without reference to his theory of causation*, are sufficient. But when we examine them with reference to his theory, that is, with reference to his doctrine of natural selection as the cause of the origin of species, a logical doubt is thrown upon his whole doctrine. And I may here remark that if the theory of evolution had depended for its validity upon the labors of Mr. Darwin alone, it could never have obtained general acceptance. It is to the labors of his contemporaries and his successors that

¹ Darwiniana, p. 239.

the credit is due of placing the evolutionary hypothesis beyond the region of rational doubt.

In saying this, I am not seeking to dim the lustre of the fame of Mr. Darwin. Far from it. He is entitled to all the credit due to the intelligent, industrious, and conscientious gatherer of the facts of nature. He was, as such, one of the most illustrious "hewers of wood and drawers of water" for science that the world has ever seen. It is upon this that the true fame of Mr. Darwin must rest in all the ages. It was this that first attracted the attention of scientists in all parts of the civilized world. The true scientist is an ardent lover of facts, as he should be; but it must be said that he sometimes "loves, not wisely, but too well;" for it unfortunately happens that even facts are sometimes prostituted to illegitimate uses. That is to say, when a mass of new and well-authenticated facts is presented to the scientist, especially if it is accompanied by an attractive theory of causation, he is not always careful to discriminate between the facts that sustain the theory and those which do not. It will not be difficult to show that Mr. Darwin's followers have not always been careful to keep that distinction clearly in view.

The facts in the case are briefly these: Mr. Darwin, in the course of extensive travel and long years of close observation, had collected a vast store of facts which bore upon the subject of organic evolution; and he wisely determined to embody the result of his labors in a book setting forth his reasons for believing that "the innumerable species, genera, and families of organic beings with which the world is peopled have all descended, each within its own

class or group, from common parents, and have all been modified in the course of descent.”¹ No one can deny that his fundamental doctrine of evolutionary development, as it is thus stated in his own language, has been amply verified by his facts. But when he comes to tell us how this modification took place, he signally fails. In other words, when he tells us that natural selection is the origin of species, he signally fails to prove the correctness of the hypothesis. That is to say, he has not given us one instance where a new species has been produced by either natural or artificial selection. He has shown what everybody has observed for himself, namely, that artificial selection—that is, breeding—has the power to change vastly the structure, or morphology, of animals, and thus produce what is loosely termed “new species.” Thus, the great variety of pigeons shows what intelligent artificial selection can do in the way of originating “morphological species;” although it is well settled that all the varieties are really descended from the rock pigeon. Again, there is a wide difference between the “razor-back” hog of the Southern States and the “preposterous pig” of commerce as exhibited in Northern county fairs and stockyards; and still more between the latter and the wild boar. But they are all of the same physiological species. The true test of species is in the phenomena of hybridization. Thus, if the offspring of two supposed species are infertile with each other, or with the original species on either side, the evidence is complete that the two parents belong to different physiological

¹ *Origin of Species*, 1st ed., p. 457.

species. The horse and the ass, for instance, when bred together produce the hybrid mule; and the latter is well known to be infertile with other mules or with either of the parent species. On the other hand, dogs, howsoever wide may be their morphological differences, as between the greyhound and the dachshund, for instance, are perfectly fertile with each other, and their offspring are fertile with each other and all other varieties or races of dogs. The same may be said of hogs, pigeons, and many other species with widely varying morphological characteristics.

To show that I am not alone in my opinion as to Mr. Darwin's failure to establish his doctrine that natural selection is the originator of all species, I quote the words of his best friend and most ardent admirer and sympathizer, the late Thomas H. Huxley:

"After much consideration, and with assuredly no bias against Mr. Darwin's views, it is our clear conviction that, as the evidence stands, it is not absolutely proven that a group of animals, having all the characters exhibited by species in nature, has ever been originated by selection, whether artificial or natural. Groups having the morphological character of species — distinct and permanent races, in fact — have been so produced over and over again; but there is no positive evidence, at present, that any group of animals has, by variation and selective breeding, given rise to another group which was, even in the least degree, infertile with the first. Mr. Darwin is perfectly aware of this weak point, and brings forward a multitude of ingenious and important arguments to diminish the force of the objection. We admit the value of these arguments to their fullest extent; nay, we will go so far as to express

our belief that experiments conducted by a skilful physiologist would very probably obtain the desired production of mutually more or less infertile breeds from a common stock in a comparatively few years; but still, as the case stands at present, this 'little rift within the lute' is not to be disguised or overlooked."¹

Now, it so happens that this "little rift within the lute" is large enough to destroy utterly the concord of sweet sounds which is popularly supposed to emanate from Mr. Darwin's instrument. In other words, the above quotation is the candid though evidently reluctant admission of an honest man that Mr. Darwin, with all his vast array of facts, has utterly failed to find one that proves his hypothesis, "even in the least degree." That is to say, the theory that all those physiological changes and differentiations that constitute species in animals, the theory that all structural changes in animal life which make up the sum-total of evolutionary development, the theory that was supposed to eliminate God from the universe and relegate all the works of nature to the domain of chance, is found to be without one solitary fact to sustain it.

It does not in the least degree militate against this one fact for Mr. Huxley to say that Mr. Darwin's arguments are "ingenious and important" when he tries to diminish its force. Nor does it strengthen the weak point when Mr. Huxley admits the value of the ingenious arguments aforesaid. Nor does it aid Mr. Darwin to supply the demand for facts when Mr. Huxley goes so far as to guess that some future "skilful physiologist" might be able to

¹ *Darwiniana*, pp. 74, 75.

supply the required fact for Mr. Darwin if he would only try hard enough. The fact remains that Mr. Darwin's theory that natural selection accounts for the origin of species has not one fact to sustain it.

Now, I hasten to repeat what I said in Part I. of this book; namely, that I have no quarrel with the theory of natural selection, or survival of the fittest. But it is a subsidiary factor in the grand scheme of evolutionary development, and not the scheme itself. Within its "sphere of influence" it is supreme, and no theory of evolution would be complete without it. But to say that it is the *cause* of organic evolution could only be exactly paralleled in absurdity by supposing the revolution of the earth on its own axis to be the cause of all planetary motion. Indeed, we might exactly parallel Mr. Darwin's case by supposing him to be a student of astronomy instead of a naturalist. We might suppose that he was an indefatigable gatherer of facts, and that after years of laborious research he had accumulated enough ammunition to explode the theory that the earth is flat and that the sun revolves around it once in twenty-four hours. We might then confidently expect him to write a book clearly demonstrating that the earth is round instead of flat, and that it revolves on its own axis, from west to east, once in twenty-four hours, etc. It is easy to imagine that Mr. Darwin would at once be hailed as a great scientist, and justly so, because his great array of facts would be demonstrative of his thesis. But suppose he labelled his book "*The Origin of Planetary Motion*," and claimed in it that the revolution of the earth *caused* all the other planets to revolve and kept them

in their orbits. Would scientists accept that hypothesis in the absence of a single fact to prove it, simply because he had proven some other proposition by a great array of facts? Well, that depends. They most likely would if it was understood that the unproven proposition would, if true, eliminate God from the universe. In that case Mr. Huxley might be depended upon to rise to the occasion and remark that "it is true that Mr. Darwin has not cited a single fact going to show that the revolution of the earth is the cause of all planetary motion; but he has proven over and over again that the earth revolves; he argues ingeniously, and I am prepared to believe that somebody else will some day work up a fact that will help Mr. Darwin out. In the mean time it is the best hypothesis we have for proving that there is no logical necessity for a Deity, and we had better stick to it and wait for something to turn up."

I submit that the logic of the two cases runs on parallel lines. It may be objected that I have supposed an absurdity as my unproven proposition. My reply is that it is no more absurd to suppose that the revolution of the earth is the cause of all astronomical phenomena than it is to suppose that a series of accidents is the cause of all evolutionary development of animal life on this planet.

This, then, is the logic of the situation as it is shown upon the surface. Viewed from that standpoint alone, it is difficult to imagine why such logicians as Huxley should cling with such tenacity to a hypothesis that admittedly has not one fact to sustain it. But when the surface is penetrated, the mystery is easily solved; for it is then found that

the theory that natural selection accounts for the origin of species thinly disguises a fundamental proposition that is vital to atheism. That proposition is that physical organism is *antecedent to intelligence*. The converse of that proposition is that intelligence is antecedent to physical organism. The latter is the theistic proposition; the former is the stronghold of atheism.

A few words will make my meaning clear. I am speaking, of course, of atheism *versus* theism solely with reference to the issue as affected, *pro* and *con*, by the facts of organic evolution. Viewed from that standpoint, the fundamental issue resolves itself into this question: —

Does mind antedate physical organism?

This is the fundamental issue in a nutshell. And it will readily be seen that to establish the affirmative is to invest every step in the progressive development of organic life with a profound theistic significance; for it leads us at once back to the very beginning of organic life on this planet. It leads, in other words, to the very heart of the great question; for, if the affirmative is true, mind antedated the lowest unicellular organism and endowed it with life and intelligence. If that is true, it necessarily involves the theistic interpretation of the origin of mind and life. If the negative is true, physical organism necessarily originated mind and endowed it with its wonderful powers. How? By an accidental juxtaposition and subsequent union of certain chemical substances protoplasm was formed, and protoplasm originated mind. This, in plain terms, is the atheistic hypothesis of the origin of life and

mind. "Science" seeks to soften the crude realism of the naked truth, as thus expressed, by the use of words of learned length and thundering sound; and hence the terms "abiogenesis"¹ (Huxley) and "archebiosis"² (Bastian), both of which mean spontaneous generation, and have been coined for the purpose of giving a scientific air to the crude doctrine that the beginning of life on this planet was due to "accident" or "chance."

At this point I pause to remark upon the logical attitude involved in this particular assumption,—that life and mind originated by spontaneous generation. That assumption is what is known in logic as *petitio principii*; and it is one of the most flagrant examples on record of that most abominable of all logical offences of which a logician can be guilty. *Petitio principii*, in plain English, is "begging the question." To beg the question is to take for granted the matter in dispute,—to assume without warrant something that involves the point under discussion.

Now, the matter in dispute between the atheistic evolutionist and the theistic evolutionist is just this question of spontaneous generation. Is that the way life originated on this planet? Or was there an antecedent mind from which the primordial germ inherited its intuitive, or instinctive, knowledge of the laws of its being? That is the vital question; and upon the decision of that question largely depends the strength of the argument for or against theism so far as it is affected by the facts of organic evolution.

¹ Discourses, Biological and Geological, Appletons' Am. ed., p. 229.

² The Beginnings of Life.

Now, the argument for spontaneous generation is simply nil. It is pure, gratuitous assumption, without a single fact to sustain it that is not a stronger argument against it than for it. Thus, Haeckel,¹ in speaking of that species of moneron discovered by Huxley in 1868, called the *Bathybius*, has this to say: —

“The oldest monera originated in the sea by spontaneous generation. This *assumption is required* by the demand of the human understanding for causality.”

The italics are mine. They were unnecessary for the purpose of merely drawing the attention of the reader to the logical fact that spontaneous generation is pure assumption, without one solitary fact to sustain it; for that may be taken *pro confesso*. Neither is it necessary to emphasize the fact that such an “assumption” is “required” by the exigencies of the atheistic argument; for that is self-evident, since there is, confessedly, nothing but assumption suited to the atheistic purpose. But I wish to draw particular attention to the monumental character of the assumption that *the logical dilemma of atheism* and “the demand of the human understanding for causality” are synonymous expressions or logical equivalents. I submit that the demand of the human understanding for causality is not adequately supplied by assumptions without evidence; and I protest against measuring human understanding by atheistic standards.

Now, I am not exaggerating in the least when I say that the strongest evidence of the correctness of

¹ The Evolution of Man, p. 31.

the theory of spontaneous generation is given by Professor Haeckel in the following sentence: "The doctrine of spontaneous generation cannot be experimentally refuted."¹ Neither can the doctrine that the moon is made of green cheese be experimentally refuted. Yet no one but an atheist, in desperate pursuit of a suitable hypothesis, would assume that the inability to prove the negative of a proposition constitutes valid evidence that the proposition is true.

Logically, the inability to prove a negative possesses no evidential value whatever in the absence of any affirmative proof of a given proposition. The absence of negative proof, however, possesses great significance when facts exist which are confirmatory of the hypothesis. In this case there are confessedly no facts to prove the affirmative. These are the words of the learned professor aforesaid: —

"Neither can the theory of spontaneous generation be experimentally proved *unless great difficulties are overcome.*"² (The italics are mine.)

Again we are reminded of Professor Huxley. Like him, Professor Haeckel finds no existing proof of his hypothesis, but thinks that maybe, sometime, somebody will find a fact, or manufacture one, that will help him out, provided he is able to overcome great difficulties. In the mean time he speaks very contemptuously of those who have tried to produce spontaneous generation "by means of the crudest experiments."³ Doubtless the learned professor refers to Huxley's great discourse on "Biogenesis

¹ Op. cit. p. 32.

² Op. cit. p. 32.

³ Op. cit. p. 32.

and Abiogenesis,"¹ in which he exposes the fallacies of all previous writers who have adopted the hypothesis of spontaneous generation. It may be, however, that the "crude experiments" he refers to are Professor Tyndall's² world-renowned series of experiments which were conducted with a view to the settlement of the vexed question. No one will accuse the learned author of "The Prayer Gauge" of entertaining any violent prejudices, on religious grounds, against the theory of spontaneous generation. Nevertheless he spent years in exposing the fallacies of those who imagined that their crude experiments had forever settled the question affirmatively. The history of experimental scientific investigation does not record a series of more carefully conducted experiments than that by which Professor Tyndall demonstrated, as far as a negative can be proven, that life cannot be generated from inorganic compounds, spontaneously or otherwise.

I cannot close the discussion of this branch of the subject without expressing my appreciation of Professor Haeckel's candor in frankly admitting the weakness of his argument at the crucial point. He admits that the "assumption" of spontaneous generation is "required" by the necessities of his argument. I agree with him. There is nothing left for atheism but such an assumption at the point where organic life commenced on this earth; for that is the crucial point in the argument for and against theism so far as the question is affected by the facts

¹ Op. cit. p. 229.

² See Tyndall's "Fragments of Science," vol. ii., art. "Spontaneous Generation."

of organic evolution. Life and mind, with all their implications and potentialities, were spontaneously generated from a fortuitous admixture of "inorganic carbon compounds,"¹ or they were inherited from an antecedent life and mind. One or the other of these propositions is true; for there is no middle ground. Professor Haeckel finds that the exigencies of the logical situation require him to assume that the first is true. But he does so, not only without one fact to sustain the assumption, but with all the facts of experimental science arrayed against it. As to the second of these alternative propositions, I shall attempt to show in future chapters that all the salient facts of evolution conspire to demonstrate its truth. In the mean time, as stated in the commencement of this chapter, my object is to show the logical attitude of atheism; and it is thought that it may now be safely assumed that Professor Haeckel has been convicted of the "direct" *petitio principii*.

Attention will now be directed once more to Mr. Darwin and his immediate coadjutors with the view of showing that they are guilty of the "indirect" *petitio*. That is to say, Mr. Darwin attempts by indirection to reach the same point that Professor Haeckel assumed directly as his major premise, namely, spontaneous generation.

It has already been shown that the logical implication of the doctrine that natural selection originates species is that physical organism antedates intelligence, that is, the intelligence that makes the selection. The very term "selection" indicates

¹ Op. cit. p. 31.

that unmistakably. Selection presupposes something to select, and an intelligence capable of making a discriminating choice. This applies, however, to artificial selection more particularly, for in that the intelligence of man makes the choice. But in natural selection, survival of the fittest is supposed to take the place of intelligence. But in that case there is also presupposed an antecedent organism capable of surviving; that is, endowed with superior strength or sagacity, or something that enables it to cope successfully with its environment and survive less favored organisms. All this is reasonable and logical as far as it goes, and it accounts for a great many things. But as I have already shown, by the aid of Mr. Huxley and others, it does not account for the *origin* of species. It does not account for the antecedent organism that is superior in strength, sagacity, etc., and consequently capable of surviving rival organisms. And that is the crucial question. Mr. Darwin answers this in effect by the one word "accident," — otherwise chance. Disguise it as you will, the Darwinian doctrine is the doctrine of chance; for he offers no other explanation, and by his contemptuous rejection of Lamarck's theory of appetency, he rejects the only possible alternative hypothesis. In other words, as I have already pointed out, he rejects the only possible theory that implies a constant, inherent force, resident in each organism, that makes for progressive development.

The question is, Why do Darwin and his atheistic followers reject that doctrine? Simply because it presupposes that mind antedates physical organism,

and that it is, in fact, the primary cause of organic changes, and, consequently, of all evolutionary development. Darwin was shrewd enough to foresee that Lamarck's theory, carried to its legitimate conclusion, that is, carried back to the primordial germ, would imply a mind antecedent to the first unicellular organism; a mind capable of endowing protoplasm with life and intelligence; a mind capable of implanting in the primordial germ the potentialities of manhood; a mind capable of endowing the lowest unicellular organism with such faculties, powers, and limitations that progressive development was a *necessity* of its being; in short, a mind capable of originating the principle of organic evolution, and establishing it as a *law* inherent in the very nature of every sentient creature. In other words, he saw that Lamarck's theory, carried to its legitimate conclusion, inevitably led to a logical demonstration of the theistic hypothesis.

Do I overestimate Mr. Darwin's logical acumen in giving him credit for foreseeing the ultimate outcome of the theory of appetency? Or, on the other hand, do I do Mr. Darwin injustice in supposing him to be moved by a desire to avoid the logical conclusion that appetency leads to theism? The most attentive reader of Mr. Darwin's works proper will probably fail to find any evidence whatever that he was so moved, except in the general trend of the Darwinian hypothesis. Mr. Darwin was too shrewd a controversialist thus to expose the weakness of his cause or the real animus of his works. Nevertheless, there exists indubitable evidence that my estimate of Mr. Darwin is neither exaggerated nor at fault.

It has often been remarked that more can be learned of the real man by the perusal of one of his private letters to an intimate friend, than can be divined by reading a dozen volumes of his published works. This is eminently true of Mr. Darwin. Accordingly we find in one of his letters to his bosom friend, Sir Charles Lyell, his deliberate opinion of Lamarck's theory, and his real reason for the contempt with which he regarded it. In this letter he was taking Sir Charles to task for referring to Mr. Darwin's views as a modification of Lamarck's. He says:—

“If this is your deliberate opinion, there is nothing to be said, but it does not seem so to me. Plato, Buffon, my grandfather before Lamarck, and others propounded the *obvious* views that if species were not created separately they must have descended from other species, and I can see nothing else in common between the ‘Origin’ and Lamarck. I believe this way of putting the case is very injurious to its acceptance, as it implies *necessary progression*, and closely connects Wallace's and my views with what I consider, after two deliberate readings, as a *wretched book*, and one from which (I well remember my surprise) I gained nothing.¹

In a later letter to Sir Charles he speaks of Lamarck's book as follows:—

“As for Lamarck, as you have such a man as Grove with you, you are triumphant; not that I can alter my opinion that to me it was *an absolutely useless book*.”² (The italics are mine.)

¹ Life and Letters of Charles Darwin, vol. ii. pp. 198, 199.

² Ibid. p. 201.

"A wretched book" — "an absolutely useless book" — is the verdict of Mr. Darwin *in re* Lamarck's work on organic evolution. Why? Simply because the latter's theory "implies necessary progression," is Mr. Darwin's answer.

If Mr. Darwin had written a volume on the subject of his religious views as expressed or implied in his doctrine of the origin of species, he could not have more plainly and definitely said: "I object to Lamarck's theory of evolution because it implies a constant force, inherent in every sentient creature and arising from the wants and necessities of its existence, that compels progressive development. I object to it because it implies that mind is antecedent to organism and is endowed with a creative energy equal to the production of organic structural changes. I object to it because, carried to its legitimate conclusion, it implies that mind antedated the lowest animal organism and impelled its structural development. I object to it because it implies that evolutionary development proceeds in obedience to a law, and not to a series of accidents, and that it is, therefore, a 'necessary progression.' I object to it because 'necessary progression' implies a definite end in view — a goal to be reached — which, in turn, implies design."

Does any one doubt that all this is implied in his remarks contrasting Lamarck's doctrine with the theory of natural selection? In other words, does any one imagine that Darwin did not regard design as implied in "necessary progression," as the very antithesis of his doctrine of natural selection? If so, we will again invite attention to some of Mr. Darwin's

private sentiments, — to an extract from his autobiography, written, not for publication, but for the eyes of his immediate family.

Speaking of his early religious beliefs as contrasted with those he afterwards entertained, he says: —

“Although I did not think much about the existence of a personal God until a considerably later period of my life, I will here give the vague conclusions to which I have been driven. The old argument from design in nature, as given by Paley, which formerly seemed to me so conclusive, *fails*, now that the law of *natural selection* has been discovered.”¹ (The italics are mine.)

I submit that words could not more plainly express his belief that the doctrine of natural selection has forever refuted the teleological argument, — the doctrine of design, as evidenced in the works of nature. This, in connection with his contemptuous rejection of Lamarck’s theory on the ground that it “implies necessary progression,” furnishes indubitable proof that he regarded his own theory as the very antithesis of that of Lamarck. That is to say, Lamarck’s theory is that the mind within the organism is capable of changing organic structure in response to necessity; hence a mind antecedent to organism from the beginning; hence a law, and hence “necessary progression” in accordance with an immutable law of progressive development implanted in the primordial germ.

These are the necessary logical implications of Lamarck’s theory,² and Mr. Darwin was not slow to

¹ Life and Letters, vol. i. p. 278.

² It must here be noted that such was not Lamarck’s opinion; for he too was an atheist, and fondly imagined that his theory elimi-

recognize the fact. Hence his indignant protest against classing any theory that implies necessary progression with his doctrine of chance. In his estimation, and surely no one has any right to gainsay it, the two hypotheses are antithetical, antipodal. On no other grounds than those I have stated could they be so considered. One leads inevitably to theism; the other is crass atheism.¹

If Mr. Darwin had not been moved to this antagonism on the grounds thus indicated, he surely could not have failed to see what Huxley evidently saw so clearly, that the two theories are complementary of each other; that, in fact, each is incomplete without the other. It is not even pretended that natural selection explains the cause of those variations of physical structure from which the selection is made. Beyond the theory of chance all is in obscurity so far as Mr. Darwin informs us. "Species," he says, "originated by means of natural selection, or through the preservation of the favored races in the struggle for life." But he does not tell us how the "favored races" came to be favored with the structural advantages which enable them to compete successfully in the struggle for life. "Chance" is the only explanation offered by Mr. Darwin, and, as we have already seen, he emphasizes it by his

nated God from the universe. Hence it was that, with that singular want of logical acumen that seems to be congenite with certain types of continental philosophers and scientists, he referred the origin of life and mind to spontaneous generation.

¹ Disguise the latter term as you will, or soften it into "agnosticism," it still remains that an agnostic is simply an atheist without the courage of his convictions; and Mr. Darwin's so-called religious views, as shown in his letters and autobiography, reveal the fact that he was a living illustration of this definition.

irascible hostility to any theory which implies a law governing the subject-matter. If, therefore, chance is *not* his theory of causation, as Mr. Huxley feebly protests, then Mr. Darwin has no theory. In any event, there is a hiatus in his hypothesis that cannot be bridged by an accident or a series of accidents.

Now, there has never been a theory promulgated that is capable of filling this hiatus by means of a law of progressive development except Lamarck's. I have stated above that Mr. Huxley saw this clearly. I do not find this admission in the text of his published works; but I do find it in his preface to Appletons' American edition of "Darwiniana." This preface is dated April 7, 1893, eleven years after Mr. Darwin's death, and but a few years before his own demise. It may therefore be regarded as his final protest against the insufficiency of his friend's theory, and a parting suggestion to science as to the only hypothesis that can fill the hiatus. He says: —

"As I have said in the seventh essay, the fact of evolution is sufficiently evidenced by paleontology; and I remain of the opinion expressed in the second, that until selective breeding is definitely proved to give rise to varieties infertile with one another, *the logical foundation of natural selection is incomplete*. We still remain very much in the dark about the *causes of variation*: the apparent inheritance of acquired characters in some cases; and the *struggle for existence within the organism*, which probably *lies at the bottom of both these phenomena*." (The italics are mine.)

I submit that, without specifically naming Lamarck or his theory, Mr. Huxley could not have more

pointedly declared his final opinion to be that Darwin's theory of evolutionary development is incomplete, and that Lamarck's is the only possible complementary hypothesis. I therefore repeat, with increased emphasis, that neither Lamarck's theory nor Darwin's is complete without the other; but that together they constitute a theory of evolutionary development that is complete, coherent, and scientific. It is complete because it leaves no hiatus to be bridged by accident or chance. It is coherent because the two factors are not inconsistent with each other. It is scientific because it accounts for all the facts and reveals a *law of evolution* under which progression is necessary.

This alone would commend it to such a mind as Huxley's, even though it does presuppose mind to be antecedent to physical organism, and, indeed, the primary cause of it. Unlike Mr. Darwin, Mr. Huxley did not shrink from the acknowledgment of facts, howsoever strongly they might militate against his "agnostic" preconceptions. One of his ablest essays was calculated to explode the fallacy of spontaneous generation,¹ indispensable as it is to the atheistic argument, as acknowledged by Haeckel. Nor could he have failed to realize the trend of the facts of nature toward theism when he finally declared his conviction that "the struggle for existence within the organism" lies at the bottom of all causes of variation in species and the inheritance of acquired characters. It was, in effect, a distinct declaration that mind is not only antecedent to physical organism, but that it is the efficient cause, the initial force, which

¹ Discourses : Biological and Geological Essays, p. 229.

lies at the bottom of all the phenomena of progressive development of animal life on this planet. Moreover, he could not have failed to see that the inevitable logical, scientific induction is that mind is antecedent to, and the efficient cause of, the primordial unicellular organism.

And this is the conclusion that Darwin so strenuously sought to avoid. This is the conclusion that Haeckel evaded by begging the question, — by the “direct” *petitio*.

And this brings us back to another singular break in Professor Haeckel’s logic, and one which has a very important bearing upon this question. In his anxiety to prove spontaneous generation, he went back beyond the true cell, the amœba, with a nucleus; that is, a physical organism with organs, in search of animal life “standing on the very boundary between organic and inorganic natural bodies.”¹

Surely, if spontaneous generation accounts for the origin of animal life, the evidence must be found on this boundary line between the two realms. Has Professor Haeckel found that evidence? Here is what he has to say in concluding his argument, so called, for spontaneous generation: —

“In conclusion, I repeat, with emphasis, that it is only in the case of monera — of structureless organisms without organs — that we can assume the hypothesis of spontaneous generation. Every differentiated organism, every organism composed of organs, can only have originated from an undifferentiated lower organism by differentiation of its parts, and consequently by phylogeny. Hence, even in the production of the simplest cell we must not assume the process

¹ The Evolution of Man, vol. ii. p. 50.

of spontaneous generation. For even the simplest cell consists of at least two distinct constituent parts: the inner and firmer kernel (nucleus), and the outer and softer cell-substance or protoplasm. These two distinct parts can only have come into being by differentiation of the homogeneous plasson of a moneron and of a cytode. It is for this very reason that the natural history of monera is of the highest interest; *for it alone* can remove the principal difficulties which beset the question of spontaneous generation. The extant monera do afford us organless and structureless organisms, such as *must* have originated by spontaneous generation at the first beginning of organic life upon the earth.”¹ (The italics are mine.)

Now let us inquire what evidence Professor Haeckel has really found to substantiate his hypothesis. In the first place, it will be noted that he admits that the moneron “alone” can help him out, and he is doubtless right; for if that fails, his doctrine of spontaneous generation, with all of its atheistic implications, comes to naught.

The thing that he has really found, upon which so much depends, is an “organless and structureless organism.” This might appear like a contradiction in terms, since physical organism presupposes differentiated organs or parts performing special functions that are mutually dependent and essential; but he calls it an organism, either for the want of a better term, or because it is endowed with a mind organism, and is therefore capable of performing functions. Be that as it may, let us fasten the “structureless” part of the moneron beyond peradventure.

¹ Op. cit. p. 33.

"It might be argued," says the learned professor, "that the monera are not really structureless, but that their organism is so minute that, in consequence of the inadequate power of our magnifying glasses, it is invisible. This objection is, however, invalid, for by the experiment of feeding, we can at any moment prove the entrance of foreign, formed, small bodies into the different parts of the body of the moneron, and that these are irregularly driven about in all directions. At the same time we see that the changeable network of threads, formed by the branching of the protoplasmic threads and the coalescence of the confluent branches, alter their configuration every moment; just as has long been known to occur in the thread-nets of the protoplasm in the interior of the plant-cells. The monera are, therefore, *really homogeneous* and *structureless*; each part of the body is every other part. Each part can absorb and digest nourishment; each part is excitable and sensitive; each part can move itself independently; and, lastly, each part is capable of reproduction and regeneration." ¹

We may now concede that Professor Haeckel has demonstrated two very important facts: namely, (1) the existence of an "organless and structureless organism;" and (2) that this organism is endowed with a mind ² capable of exhibiting the active phenomena of life, namely, nutrition, sensation, spontaneous movement, reproduction, and regeneration. It is difficult, however, to imagine upon what grounds he imagines that he has helped his case. He has, in point of fact, demonstrated the exact opposite to that which he set out to prove.

¹ The Evolution of Man, vol. ii. pp. 47, 48.

² See Binet on "The Psychic Life of Micro-Organisms," and Romanes on "Mental Evolution in Animals," quoted in part i. of this book, to prove mind in micro-organisms.

He has demonstrated that mind is antecedent to physical, structural organism.

He has shown us a mind that is capable of seizing upon a mass of homogeneous, structureless matter, and endowing it with life and intelligence; a mind that is capable of moving and moulding at will a structureless mass of protoplasm; a mind that is capable of developing an organism from an unorganized mass of primordial plasson; a mind in which all the faculties of the highest manhood potentially exist.

Professor Haeckel would himself admit all these propositions; for they are the essentials of the general theory of organic evolution. But he has not helped his theory of the spontaneous generation of such a mind from inorganic matter. If he had shown a structural organism antecedent to the mind that phenomenally manifested itself through said organism, he might, with some slight adumbrations of reason, have claimed that the organism was spontaneously generated from inorganic matter, and that said organism, in turn, might have generated the mind. Aside from the inherent absurdity involved in the supposition that a bit of slime has the power to originate a man, Professor Haeckel might thus have evolved a theory of spontaneous generation that would at least have been an improvement upon any that atheism has yet wrested from the facts of organic evolution. But since he has demonstrated that mind antedates structural organism, his theory itself must be held to be a case of spontaneous generation.

Professor Haeckel's theories, however, are of

small importance to the world when compared with the one stupendous fact that he has thus made known. Its bearing upon the whole question of the processes of progressive development of organic life is of transcendent interest and importance. It is symbolical of the whole process. The development of the amœba from the moneron was a greater structural change than was the development of man from his simian ancestry, or the amphibian from the fish, or the bird from the crawling reptile. But natural selection, in the Darwinian sense, can by no possible stretch of the imagination be presumed to have entered as a dominating factor in this, the first step in organic evolution. "The struggle for existence within the organism" is the only possible rational explanation. It is even more absurd, if possible, to suppose that the primary instinct that impelled this growth and development, the primary instinct that impelled the moneron to the acts of reproduction, nutrition, and locomotion, had its origin in natural selection. And yet this is the Darwinian doctrine, according to Romanes, of the origin of primary instincts.

Now, the "struggle for existence within the organism," or, in more specific terms, the creative power or energy resident within the organism, having thus been shown to be the initial force that impelled the progressive development of the lowest animal organisms, it must be presumed, until the contrary is demonstrated, that the same initial energy lies at the bottom of all progressive changes of physical structure.

Haeckel was right when he went back to the very

beginning of sentient life in search of the one great primordial fact from which a broad, scientific generalization could be legitimately formulated. He was right when he passed the amoeba by as possessing, in itself, no significance worth considering except that which pertains to it as being the earliest "structural organism with organs" known to science. He was right when he went back to "the boundary line between organic and inorganic natural bodies" in search of a key to the great mystery surrounding the origin of life. But, unfortunately, he was also in search of proofs to sustain a preconceived hypothesis; and hence he was blinded to the real significance of the facts which he discovered. He did not even recognize the bearing of the fact that mind antedated organism upon the subsequent steps of the process of organic development; although, to do him entire justice, the trend of his argument did not require him to consider that question. All that he could derive from that stupendous fact was the lame and impotent conclusion that somehow it "must" be that mind and life are spontaneously generated from inorganic matter. Otherwise, he tells us, we have "no other resource but to believe in a supernatural miracle" (*sic*).¹

Without stopping to discuss the subject of miracles, natural or supernatural, I desire to indicate, briefly, some of the inferences that seem to me to be logically derivable from what we have learned, by the aid of Professor Haeckel, of the phenomenal manifestation of life and mind in the moneron. I have already shown that the fact that mind in that animal

¹ Op. cit. p. 32.

is antecedent to physical organism, and that it controls and develops organism, is symbolical of the whole subsequent process of progressional development of physical organisms.

But that is not the most important inference to be drawn from this phenomenon. It exemplifies that control of the mind over the body which modern science has done so much to verify and systematize in various directions. The significant feature of that control is that it does so in the entire absence of structural organism; thus demonstrating the truth of the hypothesis that the subjective mind — the soul — is immanent in the body and not inherent in it or in any of its physical organs. In other words, it is symbolical of the fact that the soul is not dependent for its existence upon physical organism, nor for its power upon the existence of physical organs.

Again, it demonstrates the creative power of mind, and symbolizes the power from which it inherited its own potentialities, — the power that assembles cosmic matter and creates a universe.

Finally, the primordial method of reproduction, as first revealed in the monera, namely, by fission or segmentation, is demonstrative of the fact that a completely organized mind can be segregated from the parent mind without destroying or modifying the powers of either; thus symbolizing the process by which an infinite number of individualized intelligences may be segregated from an infinite, omnipresent intelligence. Thus a law — not a miracle — a *law of infinite reproduction* is revealed, which easily accounts for origin of life and mind, as well

as for all the subsequent steps in the process of organic and mental evolution, including, of course, the origin of species.

The intelligent reader will understand that the above propositions are provisionally assumed. Their verification will depend upon whether they accord with all the known facts of psychology and of organic and mental evolution. That must be more fully set forth in subsequent chapters. They are mentioned here merely by way of contrast between the inferences which atheism and theism respectively derive from the phenomena exhibited in the primordial germ.

I have now shown that the crucial question at issue between atheism and theism, so far as the facts of organic evolution are in evidence, is whether or not mind antedates physical organism; and that this involves the question of spontaneous generation on the one hand, and of natural selection on the other. I have shown that Haeckel, in assuming spontaneous generation, has done so without one fact to sustain his assumption; but that, on the contrary, all the facts revealed by experimental science, together with all the observable phenomena of the beginning of organic life, tend to disprove his hypothesis. I have shown that the question of spontaneous generation being a vital issue between atheism and theism, Professor Haeckel, in postulating the affirmative without warrant of fact, has been guilty of the logical offence known as the "*direct petitio principii*." I have also shown that Darwin, in his insistence upon natural selection as being the origin of species, has tacitly assumed the negative

of the proposition that mind antedates physical organism. I have shown that he has done so in defiance of all the facts of experimental science (artificial selection), and in direct contravention to all the observable phenomena of the beginning of organic life (the moneron).

In thus illicitly assuming the thing to be proven, without warrant of fact and in contravention of all the facts, he has been guilty of the "indirect" *petitio*; or, as Mr. Herbert Spencer would term it, the "disguised" *petitio principii*.

It will thus be seen that the atheistic theories of the Darwinian evolutionists are all based upon pure assumption. It remains to prove that the facts of evolution disprove the atheistic theories of evolutionists. That is to say, the theories of Darwinian evolutionists are atheistic; their facts are theistic.

CHAPTER III.

THE MIND OF MAN'S EARLIEST EARTHLY ANCESTOR.

The Doctrine of Heredity. — All that is inherent in Man is what he inherited from his Ancestry, Near and Remote. — The Potentials of Manhood, therefore, resided in the Moneron. — Propositions reduced to Syllogistic Form. — The Two Primordial Instincts as shown in the Moneron. — The Prepotent Agency of Physical Development and of Human Progress. — A Complete Law of Evolution thus exemplified in the Monera. — Thus Progress toward Highest Development follows Lines of Least Resistance. — Only Good implanted in Man's Earliest Earthly Ancestor. — What is Instinct? — Atheistic Theories considered. — Herbert Spencer's Reflex Action. — Romanes *vs.* Spencer. — Facts and not Phrases to be considered. — Analysis of the Mental Faculties of the Moneron. — Based on Haeckel's Statements. — Sensation, Movement, Nutrition, Reproduction, Regeneration, Intelligence. — The Promise and Potency of a Human Soul. — That Intelligence comprises a Knowledge of the Primary Laws of Organic Life. — Reflex Action presupposes Subjective Intelligence. — It is a Recognition of Danger coupled with an Effort to avoid it. — It never makes a Mistake. — The Simplest Manifestation of Instinct of Self-Preservation. — The Old Psychology at Fault. — It knew Nothing of Subjective Mind. — All its Data from the Objective Mind. — Phenomena due to Sensation being prompted by Intelligence, it follows that the same is true of the Other Faculties. — Mind of the Moneron differs in no Essential from Subjective Mind of Man, except in Degree. — The same Terms define its Powers and Attributes. — Nor can Faculties of the Moneron be adequately described except in Terms that define Omniscience.

THE fundamental doctrine of all forms of the theory of evolution applied to biology is that all living creatures, man included, descended from a common ancestry. Science has demonstrated this to be true by tracing the ancestry of man back through numerous gradients to the very lowest forms

of organic life. A corollary of this is that the faculties of man constitute the sum of all his ancestral faculties and instincts that have remained useful or advantageous in the "struggle for life." In other words, all that there is inherent in man is what he has inherited from his ancestry, near and remote. It follows that the potentialities of manhood resided in the lowest sentient being, — in the moneron.

This is, in brief, the doctrine of heredity held and insisted upon by all evolutionists, from Darwin down, who have discarded the doctrine of special creations. And it was because science has been able practically to demonstrate this doctrine to be true, that the dogma of special creations of genera and species has been yielded even by those who do not admit that God has thereby been eliminated from the universe. If science has demonstrated anything more clearly than another within the purview of biological research, it is that the faculties of man were inherited from his lower ancestry; and hence those faculties resided, potentially, in the lowest unicellular organism. Scientists may differ in regard to minor details relating to the specific processes by which the physical organisms of genera and species have been evolved; but the doctrine of heredity is common to all forms of the theory of evolution applied to biology.

We are enabled, therefore, to start our argument with a proposition that will not be disputed by any scientific evolutionist: —

The mental faculties of man are inherited from his lower ancestors, beginning with the lowest unicellular organism.

This general proposition cannot be successfully controverted, and no evolutionist will make the attempt. It involves another proposition, however, which, as before remarked, is its corollary; namely, that the faculties of manhood exist potentially in the lowest form of animal life, to wit, the moneron. If the first proposition is true, the second is logically self-evident. But, lest some one might be inclined to doubt the soundness of the latter proposition, we will reduce it to the form of a syllogism, thus:—

1. An inherited faculty presupposes the existence of that faculty, actually or potentially, in the ancestry, near and remote, from which the inheritance was derived.

2. Man inherited his faculties from his lower ancestry, beginning with the lowest form of animal life.

Therefore the faculties of manhood resided potentially in the lowest form of animal life.

We now have an undisputed and indisputable proposition to start with, and one upon which I shall hereinafter strongly insist. It must be remembered, however, that I have not, thus far in this chapter, stated any new propositions. I am merely trying to reduce to logical form and consistency the fundamental truths which evolutionists have discovered, and by which they have relegated the doctrine of special creations to the realm of superstition. These truths were, however, supposed to be atheistic by those who first applied them; but I shall endeavor to show that, when carried to their legitimate conclusion, they are the stronghold of scientific theism.

The reader will now recall the fact that, in Part I. of this book, I have endeavored to strengthen the proposition that the potentialities of the highest order of manhood reside in the lower organisms. I did so by showing that all the instincts of the lower animals are essentially altruistic, save the one instinct of self-preservation. All the others, beginning with the instinct of reproduction, pertain to future generations, — first, to the perpetuation of the species by reproduction, and secondly, to the care and preservation of the young. I traced the development of the altruistic instincts and impulses to the higher civilization of man, showing that they are infinitely stronger than the purely self-regarding instinct of self-preservation. I pointed out the fact that the altruistic instinct lies at the bottom of all progressive development, physical, mental, moral, and religious; and that in that sense it might be termed the “evolutionary instinct,” — the constant, effective energy, inherent in every sentient creature, that makes for physical, mental, and moral progress, for the higher civilization, for universal altruism.

I have thus endeavored to strengthen the final view of Huxley, that the “struggle for existence within the organism” lies at the bottom of all progressive physical development and of all structural changes of physiological organism, by showing that it is equally potent in mental, social, moral, and religious evolution. And I have thus endeavored to strengthen the proposition of the atheistic philosophers, that the potentials of manhood reside in the moneron, by showing that the first reproductive act of that “organism without organs” was

essentially altruistic and progressive; and that the instinctive emotion that prompted the act, together with its concomitant altruistic emotions, — the love of offspring and care for the young and helpless, as manifested in all those actions and enterprises that redound to the benefit of future generations, now constitute the prepotent agency of human progress.

And the intelligent reader will not fail to note that, in thus reclassifying the human instincts and emotions by grouping all the instincts and impulses that pertain to the well-being of future generations into one class, which I have designated as "altruistic," thus leaving the purely self-regarding instinct of self-preservation in a subordinate or subsidiary class by itself, I have suggested a law of evolutionary development the executive energy of which inheres in that prepotent group of altruistic emotions and impulses. But that of itself is not the most significant part of it. Its real significance consists in the fact that the same instincts and faculties that cause the progressive development of animal life and structural organism, also serve as the prepotent energy that causes the progressive development of mankind toward the higher civilization on lines leading to the ultimate goal of universal altruism. Nor is this all; for, if this hypothesis is the true one, it follows that evolutionary progress, physical, mental, moral, and religious, follows the lines of least resistance in nature. In other words, the natural tendency of all the instincts, except that of self-preservation, is altruistic, that is, other-regarding; and the only task imposed upon mankind is that of regulating those

instincts, - including that of self-preservation, and directing their energies into normal channels. This is a far different task from that imposed by the old philosophies which regarded all the natural impulses of man as evil and only evil; which regarded the so-called "animal propensities" as something to be fought and annihilated, instead of regulated, restrained, purified, elevated, and legitimated. It gives to man a far different status in the moral universe from that assumed by the egoistic philosophy of Mr. Herbert Spencer, which assumes that all human acts are prompted by selfishness; and that those of the purest altruism are but selfishness in a slightly less offensive form, but still selfish. In short, the old philosophies imposed upon man the task of laboring upon the lines of greatest resistance in nature whenever he sought to elevate himself or benefit mankind. Whereas the hypothesis that I have ventured to advance presupposes that good and only good was implanted in the primordial germ. And hence I have ventured to assent to and to emphasize the doctrine of the atheistic evolutionists, that the potentials of manhood, the loftiest manhood, are resident in the lowest form of animal life.

It will now be in order to inquire what evidence is to be found in the mental phenomena of the lower orders of animal life to justify such a stupendous and far-reaching generalization. To that end we will, partly by way of recapitulation, group those phenomena which are demonstrative of the possession, by the lower animals, of faculties and powers some of which, by development alone, may reach the highest possible grades of human intelligence.

Let us begin with the intelligence possessed by the lowest unicellular organism. That intelligence is designated by the name of "instinct;" and by most of the atheistic philosophers it is thus dismissed as possessing no special significance beyond the fact that it is a curious phenomenon common to the lower organisms. Their object, in fact, seems to be to avoid the obvious significance of the phenomena; and hence they dismiss it by a resort to the usual *petitio principii*. This, as I have already pointed out, is the invariable method of atheistic reasoning whenever its votaries are confronted with a phenomenon that clearly points to a theistic conclusion. Hence they have resorted to the use of such words and phrases as "irritability" and "reflex action," to account for the obvious intelligence of the lower organisms. Thus, Mr. Herbert Spencer classes all reflex action as instinct; and then, presumably, in order to show that it is a poor rule that will not work both ways, he coolly informs us that all instinct is "reflex action." To do him entire justice, however, it must be stated that he does not confine himself to this formula; for when he comes across a particularly hard nut to crack, — that is to say, when he comes to an instinctive action that obviously is *not* a "reflex action," he ably gathers it in under the term "compound reflex action."

I will not undertake the superfluous task of refuting a proposition so obviously unsound; for Romanes has ably performed that task in his "Mental Evolution in Animals," to which the reader is referred. I will only pause to remark that Mr. Spencer's phi-

losophy of instinct justifies the well-worn definition of metaphysics, namely: "Metaphysics consists in the invention of terms that have no meaning, and then explaining things by those terms."

As Romanes has clearly shown, though perhaps in milder and more round-about phraseology than I am able to employ, the terms "reflex action" and "compound reflex action" are absolutely meaningless when applied to the great bulk of instincts with which animals and human beings are endowed.

But what is instinct? This question can be answered intelligently only by confining ourselves to facts and phenomena, and divesting ourselves of the prejudices engendered by the use of those so-called "scientific" terms by which the whole subject has been so ably obscured. Especially do we need to divest ourselves of the impressions engendered by the use of terms that in themselves imply a theory of causation, such as "reflex action," whether simple or compound, "irritability," "inspiration," "special providence," "special creation," and "spontaneous generation." In other words, let us examine the facts of instinct, and then see if we can find a definition that will fit the facts. When that is done, we may look for a theory of causation that will fit the facts, — not before. That is to say, let us treat the question by the inductive method, — reasoning from facts to the general law underlying them, — and not by first formulating a disputable postulate and then distorting the facts to fit the assumed theory of causation. Now, what are the facts, the primordial facts, of instinct? I begin with the lowest animal organism, for it is at the very threshold of the or-

ganic world that we must find, if anywhere, the facts that will reveal the origin of life.

Again, we will accept the facts from atheistic sources. If the reader will now re-examine the chapter in Part I. in which the psychic life of micro-organisms is discussed, he will more fully appreciate the point we are about to examine. In the mean time it will be sufficient to mention the salient features of what we have previously learned. Haeckel tells us that the moneron—that wonderful “organism without organs,” that stands upon the very threshold of the organic world—is endowed with the faculty of sensation. That is to say, it is capable of feeling, for it reacts to stimuli. It shrinks from contact with that which will injure it. In other words, it not only has sensation, but it is endowed with the instinct of self-preservation, and instantly adopts the only means of self-protection within its power. It adapts means to ends; and this, according to Romanes and Binet, is indubitable evidence of intelligence.

Haeckel also tells us that the moneron seeks and obtains nourishment; and, having found it, it performs the functions of digestion and assimilation. It can be fed artificially, and the process of digestion can be plainly seen under the microscope. The food, when colored for that purpose, can be seen to enter the body indifferently at any and all points, and to move from one part of the body to another,—“irregularly driven about in all directions;”¹ thus demonstrating at once the total absence of physical organism, and the power which is resident in its

¹ *The Evolution of Man*, vol. ii. p. 47.

mind to sustain life by adapting means to that end. Moreover, Binet tells us that unicellular organisms exercise the power of choice between that which is nutritious and that which is inert or deleterious; all of which constitute further proofs of intelligence, further demonstrations of the existence of a mind organism.

Again, Haeckel informs us that his moneron is endowed with powers of locomotion. That is to say, it can move from place to place by means of improvised limbs (pseudopodia) which it projects at will from any part of the body.¹ It is by means of these improvised limbs that it moves about in search of nourishment; and Professor Gates has demonstrated that it has a memory of the direction in which food may be obtained, and that it can be educated to return to the place where it has once found food to its liking. This, as Ribot has clearly shown, is indubitable proof of consciousness.²

Lastly, Professor Haeckel tells us that the moneron reproduces itself asexually, that is, by fission or segmentation. The particular species which we have been considering, namely, the *Protamoeba*, after it has attained a certain size, simply separates into two pieces. "Thus, in the simplest possible way, two new individuals proceed by self-division from one quite simple individual."³

And thus was performed the first act of primordial altruism. Thus was taken the first step in the pro-

¹ It should be noted here that there are many different genera and species of monera; but the essentials above enumerated are the same in all.

² See "Diseases of Personality," p. 6.

³ *Op. cit.* p. 48.

cess of organic evolution,—the first advance in the phylogenetic series that culminated in man. Thus were exhibited for the first time in the organic history of the earth all the phenomena of life, of sensation, movement, nutrition, reproduction, and intelligence,—the promise and potentialities of a human soul.

These are the facts, these the phenomena, relating to the instincts of the primordial germ. Now, let us for the moment ignore all the “set phrase of speech” with which theorists have befogged the question, especially all those words and phrases which imply preconceived theories of causation.

Looking the simple facts squarely in the face, then, what do we find?

First, a bit of protoplasm that is alive. It is a living, moving entity. It is an animate creature, and hence is endowed with a mind; for having a mind is the distinction between the animate and the inanimate in all nature.

Secondly, we have found a sentient creature that does things; and voluntary action is a crucial distinction between the animate and the inanimate.

Thirdly, we have found an animate, sentient creature that knows something. We know that it knows something because it does something; and the only criterion by which we can judge of what or how much it knows, is by observation of what it does. If therefore we find that this creature invariably does what reason would approve, we must conclude that its intelligence, limited though it may be, is of a very superior quality.

Fourthly, we find that this creature invariably does

that which reason would approve. Thus, (1) it never rushes into danger, but avoids it if possible. (Reaction to sensory stimuli.) (2) It does not lie inert, but moves about in search of food by means of improvised limbs. (Spontaneous movement.) (3) Having found food, it does not reject it, but absorbs it, rejecting only that which is deleterious. What it has absorbed it digests and assimilates. (Nutrition.) (4) Finally, having attained maturity, it no longer confines its energies to purely selfish acts; but it reproduces itself, and thus provides for the perpetuation of its species,—provides for future generations, for evolutionary progress. (Reproduction.)

In short, the moneron exercises all the primary functions and produces all the primary phenomena of organic life,—sensation, movement, nutrition, and reproduction. And it does so in a way that presupposes intelligence, for it adapts means to ends, and exercises the power of choice; which, as we have already learned from Binet, Romanes, Gates, Ribot, and others, is the crucial test of intelligence.

Now, to reduce what we have learned from the actions of the moneron to its lowest terms, we must conclude:—

1. That the precision with which the moneron performs its functions, and the invariably beneficent results which follow, are demonstrative that its acts are in accordance with a law, and that that law is the primary law of organic life.

2. That the intelligence with which the moneron is endowed consists of a knowledge of the primary law of organic life.

I have shown in previous chapters that instinct and

intuition are identical, differing only in degree and subject-matter, and that they both have to do exclusively with general laws or first principles. The conclusion, therefore, that the moneron is endowed with a knowledge of the primary laws of organic life not only accords with what we know of instinct or intuition in general, but it is in strict accordance with the observable phenomena in the life of the moneron.

We are prepared, therefore, to define instinct, as we find it existing in the lowest form of animal life, as the power of immediate perception or apprehension of the essential laws of its being; this power being antecedent to and independent of reason, instruction, or experience.

Now, whatsoever may be one's theory of causation, or his hypothesis as to the origin of life, whether it be spontaneous generation or special creation, it cannot be denied that the facts of the organic history of the moneron justify this definition of its instincts. This conclusion cannot be evaded without plunging into the realms of the supernatural and setting up the hypothesis of perpetual miracle. That is to say, the monera are obviously impelled to action by an intelligent energy or force; and this intelligence is either resident within the organism or it is an extraneous force. As the latter would imply a perpetual miracle, science is driven to accept the other hypothesis in order to keep within the domain of natural law. Even Mr. Herbert Spencer's doctrine of reflex action does not militate against the theory of an intelligent energy within; for in its simplest form, that of reaction to peripheral stimuli, reflex action presupposes a subjective intelligence within the organism,—an

intelligence that is endowed with the instinct of self-preservation. In other words, reaction to stimuli is neither more nor less than shrinking from danger, — an act which is necessarily prompted by an intelligence which apprehends or perceives an imminent danger; an intelligence which instantly adapts means to ends by adopting the only course by which it can avert the threatened injury, namely, by moving itself *away* from the danger point. If the act were not prompted by intelligence, it would be just as apt to move toward the danger point as from it. In this regard the action of the moneron differs in no respect from that of the most highly organized human being. The latter, however, employs a nervous organism, the afferent nerves conveying the impulse to a nerve centre, whence it is reflected back as an efferent impulse, independently of the volition of the objective mind.

It is at this point that the old psychology fails to account correctly for reflex action. Knowing nothing of the subjective mind, as distinguished from the mind of which the brain is the organ; and realizing that the efferent impulse is independent of volition, that is, the volition of the objective mind, the inference was that, somehow, reflex action is not prompted by intelligence. Whereas, in point of fact, it is prompted by the highest intelligence that man possesses, namely, that of the subjective mind, — the mind of instinct or intuition, the mind that is ever alert for the preservation of the body. Reflex action, therefore, as manifested in reaction to a peripheral stimulus, as when a limb is pricked by a sharp instrument, is the simplest phenomenal

manifestation of the instinct of self-preservation. It is manifested alike in the moneron and in man, for it is prompted by the same subjective intelligence. There is this difference, however: in the moneron the act is performed independently of physical organs, which is another demonstrative proof that the subjective mind antedated physical organism.

Having shown that the phenomena due to sensation in the moneron are prompted by intelligence, we need not produce arguments to show that all its other functions are prompted by the same intelligence; for two of the other three functions are manifestations of the same instinct, namely, that of self-preservation. That is to say, three of the four classes of the phenomena of organic life, as manifested in the primordial germ, namely, those of sensation, movement, and nutrition, are all due to that instinct. The phenomenon of reproduction, on the other hand, is due to a totally different instinct, as I have hereinbefore pointed out. I have ventured to designate it as the "evolutionary instinct" or the "altruistic instinct." It is entitled to the first designation because it constitutes that powerful, creative energy that lies at the bottom of all progressive physical development of animal life. It is entitled to the second designation because it prompts to acts that pertain exclusively to future generations, and is therefore the basis of all the altruistic emotions.

And this is why I have felt compelled to define instinct, as we find it manifested in the lowest form of animal life, in the general terms I have employed. That is to say, the instinct of the moneron is not

merely the instinct of self-preservation, although it includes that instinct; but it also includes that which is in a sense the exact opposite. In a word, it includes that energy that lies at the bottom of all evolutionary development, — physical, mental, moral, and spiritual. It is upon this hypothesis alone that evolutionists can logically predicate the doctrine of the descent of man from the moneron. It is upon these facts alone that they can logically assume that the potentials of manhood are resident in the moneron.

The instincts of the moneron cannot therefore be adequately defined in terms that will not apply to the highest intuitions of man; for if man is descended from the moneron, it follows that his highest intuitions are the result of the development of identical faculties existing inchoate in that ancestor.

Moreover, *the instincts of the moneron cannot be adequately defined or described except in terms that are also definitive of omniscience.*

We find, therefore, in the lowest unicellular organism known to science, psychical faculties that by development become the highest mental attributes of man, and by extension to infinity, the highest conceivable attributes of an Omniscient Deity.

CHAPTER IV.

OTHER GODLIKE POTENTIALS IN THE MIND OF THE MONERON.

Endowed with Creative Powers. — The Real "Origin of Species." — Haeckel's Admissions. — Its Development from the Undifferentiated Moneron to the Differentiated Amoeba. — The Energy "from within." — The Greatest Single Step in the Process of Evolution. — The Key to the Whole Mystery. — The Creative Power of Mind. — We must infer that all other Changes in Organism were due to the same Creative Energy. — It is the Constant Force behind all Progressive Development. — Huxley on the Innate Creative Powers of Animal Intelligence. — The Growth and Development of the Salamandrine Egg. — The Power of the Water Newt to reproduce Lost Limbs. — These Powers Typical Examples of Creative Energy. — They are Nature's Divine Revelations. — This Creative Power by Extension to Infinity would mean Omnipotence. — Its Knowledge of the Essential Laws of its Being by Extension would mean Omniscience. — Its Power is that of Mind over Matter. — It is, then, essentially Godlike, differing only in Degree. — The Tendency of Science to name Things in the Absence of an Explanation. — The Popular Belief that Names do explain Things. — Illustrative Examples. — The Theory of the Unconscious. — Hence Learned, Talk of the Unconscious Acts of the Lower Animals. — All the Facts of Experience show that the Subjective Mind of Man is most intensely Conscious. — We have a Right to infer that the same is True of Animals. — The same Laws prevail. — Subjective "Unconsciousness," therefore, is Objective Ignorance of the States of Subjective Consciousness. — The Same is True of our Knowledge of Consciousness of Lower Animals. — Instinctive Acts are therefore presumably Conscious Acts. — The Consciousness of a Godlike Mind. — Whence came it? — There are but Two Hypotheses. — One is Spontaneous Generation; the Other is Divine Inheritance. — One is Atheism; the Other is Theism. —

One is without a Fact to support it,—it rests upon Pure Assumption,—a *Petitio Principii*, Gross and Palpable; the Other will be discussed in the Ensuing Chapters.

I HAVE now shown that the mental faculties with which the lowest unicellular organism is endowed contain the promise and potency of a human soul. I have thus confirmed the essential hypothesis of evolution, which is that man descended from the primordial germ, and hence, *ex hypothesi*, in the primordial germ resided the potentialities of manhood. In doing this I have been careful to draw upon the acknowledged authorities on the subject of evolution for my facts; and I have given to those facts the only interpretation that can possibly confirm their fundamental hypothesis. I have also shown that the only legitimate interpretation of their facts not only confirms the theory that the potentialities of manhood reside in the primordial germ, but that the quality of mind exhibited in man's remotest earthly ancestor is essentially godlike, differing from Omniscience only in degree, and not in kind.

It remains to inquire what other godlike powers inhere in the mind with which the moneron is endowed. And, in doing so, let us continue the policy of ignoring all preconceived theories of causation, looking only to the facts for guidance to conclusions.

The first question to be considered is, What powers might we reasonably expect to find in a being that is invested with such transcendent potentialities as science has found the moneron to be clothed withal? We have already seen that that being is invested with the potentialities of manhood; nay, that its intelli-

gence is godlike in kind. Now, if it is true, as Lamarck holds, and as Huxley believes, that the "struggle for life within the organism" lies at the bottom of all physiological changes incident to progressive development of animal life on this planet, we may reasonably expect to find evidences of the fact in the lowest unicellular organisms. Again, if it is true that an energy inheres in the mental organism of animals that is equal to the production of physiological changes, or, in other words, that is able to originate new species, the power can be designated by no words less significant than *creative energy*.

Let us, then, call Professor Haeckel to the stand once more, and inquire how the second stage was reached in the process of organic evolution. He says: —

"Next to the simple cytod-bodies of the monera, as the second ancestral stage in the human pedigree (as in that of all other animals), comes the simple cell, that most undifferentiated cell-form, which, at the present time, still leads an independent solitary life, as the amœba. For the first and oldest process of organic differentiation, which affected the homogeneous and structureless plasson-body of the monera, caused the separation of the latter into two different substances: an inner firmer substance, the kernel, or *nucleus*; and an outer, softer substance, the cell-substance, or *protoplasma*. By this extremely important separative process, by the differentiation of the plasson into nucleus and protoplasm, the organized cell originated from the structureless cytod, the nucleated from the non-nucleated plastid. That the cells which first appeared upon the earth originated in this manner, by the differentiation of the

monera, is a conception which in the present condition of histological knowledge seems quite allowable; for we can even yet directly observe this oldest histological process of differentiation in ontogeny."¹

Is it too much to say that here we have a key to the whole mystery with which the question of organic evolution is invested? Here is the first tangible evidence we have of the *creative power of mind*. And here, most certainly, is the key to the mystery that has been woven about the origin of species. For the amoeba is the first distinct species that had its origin in another and an antecedent species. Moreover, as I have before remarked, the step from the moneron to the amoeba was the greatest single step that has ever been taken in organic history. For the difference between any organism and no organism is necessarily greater than the difference between any two successive or contiguous organisms in the phylogenetic series.

Now, the question is, What was the power that produced the change from the moneron to the amoeba, and where does it reside? For there must have been some form of energy behind so vast a change, unless, indeed, we are content to relegate the whole question to the domain of chance or of miracle. As natural selection cannot be supposed to figure in the case, we must dismiss the hypothesis of chance as untenable. As science cannot admit the hypothesis of miracle, we are compelled to look elsewhere for a solution of the problem.

Now, there are two things that are self-evident

¹ The Evolution of Man, vol. ii. p. 50.

in regard to the energy that lies at the bottom of the change from the moneron to the amœba: (1) we know that this energy exists; and (2) we know that it is moved by intelligence. That is to say, it is an intelligent force. We know that much because it constantly does that which reason would approve. Its efforts are constantly directed toward the accomplishment of some specific, beneficent end. In short, it adapts means to ends, which is the test of intelligence as distinguished from chance.

We also know that this intelligent energy is either resident within the organism or that it is an extraneous force. As the latter implies a miracle, we are driven to the conclusion that *an intelligent, creative energy is resident within the lowest animal organism*; and that this intelligent, creative energy originated the first species of animals known to science as having a physical organism.

From this primordial fact we have a right, until the contrary is proven, to infer that all subsequent changes of physiological organism are brought about by the same agency. That is to say, we have a right to infer that the intelligent, creative energy that has been shown to exist in the moneron, that energy which Lamarck designates as "appetency," and Huxley describes as "the struggle for life within the organism," is the constant force, the impellent energy, that is the efficient cause of all progressive development of animal life; that is, in short, the origin of species.

Does any one doubt the existence of creative energy within the animal organism? If so, let him observe some of the commonest phenomena within

the range of observation of everybody, — phenomena so common, indeed, that few pause to reflect upon their profound significance. For instance, let him study the development of the chick from the egg or the plant from the seed. Apropos of this, Professor Huxley, in speaking of heredity and the physiology of reproduction, has this to say: —

“The student of Nature wonders the more and is astonished the less, the more conversant he becomes with her operations; but of all the perennial miracles she offers to his inspection, perhaps the most worthy of his admiration is the development of a plant or of an animal from its embryo. Examine the recently laid egg of some common animal, such as a salamander or a newt. It is a minute spheroid in which the best microscope will reveal nothing but a structureless sac, enclosing a glairy fluid, holding granules in suspension. But strange possibilities lie dormant in that semi-fluid globule. Let a moderate supply of warmth reach its watery cradle, and the plastic matter undergoes changes so rapid, and so purposelike in their succession, that one can only compare them to those operated by a skilled modeller upon a formless lump of clay. As with an invisible trowel, the mass is divided and subdivided into smaller and smaller portions, until it is reduced to an aggregation of granules not too large to build withal the finest fabrics of the nascent organism. And, then, it is as if a delicate finger traced out the line to be occupied by the spinal column, and moulded the contour of the body; pinching up the head at one end, the tail at the other, and fashioning flank and limb into due salamandrine proportions, in so artistic a way that, after watching the process hour by hour, one is almost involuntarily possessed by the notion that some more subtle aid to vision

than an achromatic would show the hidden artist, with his plan before him, striving with skilful manipulation to perfect his work.

"As life advances, and the young amphibian ranges the waters, the terror of his insect contemporaries, not only are the nutritious particles supplied by its prey, by the addition of which to its frame growth takes place, laid down, each in its proper spot, and in due proportion to the rest, as to reproduce the form, the color, and the size, characteristic of the parental stock ; but even the wonderful powers of reproducing lost parts possessed by these animals are controlled by the same governing tendency. Cut off the legs, the tail, the jaws, separately or all together, and, as Spallanzani showed long ago, these parts not only grow again, but the reintegrated limb is formed on the same type as those which were lost. The new jaw, or leg, is a newt's, and never by any accident more like that of a frog." ¹

I have quoted this passage from Huxley for two reasons: First, because evolutionists rightly hold that the laws governing the development of the germinal cell are the same as those governing the development of the primordial germ. That is to say, the ontogenetic history of the germinal cell in many cases is a reproduction of the salient features of the phylogenetic history of the primordial germ. The creative energy, therefore, the operations of which may be observed under the microscope in the one case, is illustrative of powers which are exercised in the other. Secondly, the reproduction of lost limbs by the water newt is an example, which each may observe for himself, of that creative power, resident within the animal organism, that is the source and agency of all organic

¹ *Darwiniana*, p. 29 *et seq.*

growth and development. Facts are Nature's divine revelations; and she never fails to give us patent exemplifications of her latent powers.

I have now shown that the intelligence resident in the lowest form of animal life is of such a nature that, by extension to infinity, it could be characterized by no word but "omniscience." And I have shown that this same intelligence is invested with creative powers such as, by enlargement to infinity, would constitute omnipotence.

Its knowledge is of the essential laws of its being; and this knowledge is antecedent to reason, experience, or instruction. It is intuitive knowledge; but it is perfect, for it never makes a mistake. What more can be said of omniscience?

Its power is that of mind over matter. It assembles matter and creates a structural organism. What more can be said of omnipotence than that it assembles matter and creates a structural universe?

Proportioned to its stage of development and the limits of its environment, therefore, the mind of the moneron is essentially godlike.

The underlying facts leading to these conclusions no evolutionist can or will deny. Atheistic philosophers will talk learnedly about the "unconscious," automatic acts of the lower organisms, and will gravely inform us that there is no intelligence in instinct; that it is all accounted for by the use of some such words as "irritability," or "reflex action;" and that even the hardest problems can be solved by the use of the phrase "compound reflex action." To be entirely candid, it must be said that these and other words and phrases of similar import have

served their purpose admirably; for the average atheistic mind happens to be so constructed that it considers any perplexing phenomenon to be satisfactorily and scientifically explained when some eminent philosopher gives it a name.

Thus, the late Professor W. B. Carpenter many years ago summarily disposed of a very large instalment of psychic phenomena by inventing the term "unconscious cerebration." If the term ever had a meaning, nobody has found it out; but it served its purpose for many years, and was confidently believed by many to be an extremely scientific explanation of things. Since then the theory of the "unconscious" has been extended to great lengths. Some have even held that God, "if there is a God," is himself unconscious. Others confidently assert that the lower animals act without consciousness, — that all instinctive acts are devoid of intelligence, etc. Without stopping to indulge in an unprofitable, speculative discussion of the question, I would ask, What does any one know about the consciousness of the lower animals? What, in fact, does any one know of the consciousness of his own subjective mind? Some have gone so far as to hold that it, too, is unconscious, and have designated it "the unconscious mind." Others call it the "subconscious mind," hinting that its consciousness, what little there is of it, is of a very inferior quality.

The truth is that all the phenomena of the subjective mind go to prove that it is the most intensely conscious mind that we know anything of; that it is constantly alert, sleeplessly active, and untiringly vigilant. Its potentially perfect memory has been

made manifest in thousands of ways.¹ Its intuitive knowledge of the laws of its being is a matter of history. Its prodigious power of rapid mentation, as shown in mathematical prodigies and revealed by those who have been rescued from drowning, is well known to every investigator. That it is, in short, intensely conscious of infinitely more than can possibly be cognized by the objective senses, is the most certain and significant truth revealed by modern experimental psychology.

In point of fact, all that there is of unconsciousness in the mind of man is that of his objective mind. That is to say, the objective mind is unconscious, or ignorant, of the consciousness of the subjective mind; that is, of the extent and character of that consciousness. All that we know or can know of it is what we can learn by the study of its phenomena. By that study we know that the subjective mind of man is intensely conscious of all that has ever been cognized, however superficially, by his objective mind; for we know that it is endowed with a memory that is potentially perfect. We also know that it possesses the power of intuitional perception of essential truth, differing in degree, but not in kind, from the instinctive faculties of the lower animals. We know these things, not only because phenomena have been observed to occur spontaneously which exhibit these faculties and powers, but because they can be experimentally reproduced by well-known means.

These are the facts, and these are the only facts, by which we can determine the question of consciousness in the instinctive acts of the lower animals.

¹ See "The Law of Psychic Phenomena."

Starting, then, from this basis of fact, and knowing that man inherited his subjective faculties from the lower animals, we have the right to infer that the instinct of the lower animals is identical in kind with the subjective mind of man.

This being true, it follows that every instinctive act of every animal, from the moneron to man, is an act of subjective consciousness,—a consciousness that is infinitely more pronounced, alert, and potent than any of which the objective intelligence of man can conceive or can realize from experience.

We are now prepared to realize how and why it is that the potentialities of manhood reside in the moneron. We can now understand how and why it is that the transcendent faculties of man were inherited from the lowest animal organism. It is simply because those faculties existed, inchoate but potential, in that organism.

Thus far I have not travelled outside of the general doctrines of the evolutionists, except for the purpose of finding valid reasons for accepting their fundamental hypothesis that man is the product of evolutionary development from the lowest forms of animal life. In doing so, however, I have shown that they “builted better than they knew;” for in man’s earliest earthly ancestor there existed a mind which any man may be proud to claim as his heritage,—a mind that in its essence is divine.

Whence came it? That is the great question in which the whole world is interested. From the evolutionary standpoint there are two hypotheses to be considered, and only two; for in undertaking to discuss the question upon a purely scientific basis, we

have tacitly agreed to ignore all theories not based upon observable phenomena; and the phenomena which we have adopted as the basis of our argument are those of organic and mental evolution. This, of course, precludes the discussion of such questions as that of special creations; or, in fact, of any other theory or dogma not based upon the facts and phenomena within the purview of our special line of inquiry.

I repeat, therefore, that, accepting the facts of organic and mental evolution, there are but two hypotheses to be considered in dealing with the question, What is the source and origin of life and mind on this planet?

One hypothesis is that of spontaneous generation; and the other is that of divine inheritance. The first is the atheistic theory of fortuitism, or chance; the other is the theistic theory of cause and effect.

The theory of fortuitism is very simple, and hence it commends itself to that very large class of people who, having mastered the axiom that "The greatest truths are the simplest," infer that all simple statements are great truths.

I am aware that it will be vehemently denied that the doctrine of spontaneous generation is the doctrine of fortuitism, or chance; for either of these words is to the atheistic evolutionist as the red rag to the mad bull. Nevertheless, a simple analysis of the doctrine will reveal its true character. The theory is that certain chemical substances, when they happen to be in juxtaposition, unite to form protoplasm, and that protoplasm generates mind.

That is simple enough, but it is fortuitism; for if it had not so happened that exactly the right kind of chemicals came together in exactly the right proportions, the organic world would still have been literally "without form and void." There would have been no protoplasm, and hence no "basis of life." The only escape from this logical dilemma would be by the admission, either that protoplasm was a special creation, or that it was the result of a law of organic evolutionary development, of which the formation of protoplasm was to be the first grand step in a phylogenetic series culminating in man. But as this would approach dangerously near the teleological domain they cannot be expected to make any such admission; especially since the Darwinian philosophers hold that all subsequent steps in evolution are due to chance. Their theory of evolution would lack coherence if they hesitated to refer the first step in the process to the same convenient and "simple" hypothesis.

All this, however, is a question of very small importance when compared with the main issue, which, in plain language, is this: —

Is primordial slime endowed with the faculty of generating a godlike mind?

Or, to put it within the limits of their own estimate of the mind of the primordial germ, Is primitive slime endowed with the faculty of generating a mind invested, *ab initio*, with the potentialities of manhood?

It must now be remembered that the Darwinians have not produced one fact that even suggests the possibility that life and mind were thus spontaneously generated. On the contrary, their ablest scientists

are compelled to admit that their most careful and painstaking experiments have failed to confirm the hypothesis. And Haeckel himself is compelled to declare that the theory is adopted simply because "this assumption is required by the demand of the human understanding for causality;" i. e. the atheistic understanding. In other words, he virtually confesses that he is compelled to set up a hypothesis that has not one fact to sustain it, in order to escape the dire alternative of believing — to use his own language — in a "supernatural miracle."

His logical attitude is this: he begs the question, to start with, by assuming to decide, confessedly without evidence, the very question in dispute; and then offers as an excuse another assumption, also without evidence or reason, that is equally disputable and in dispute. That is to say, he assumes to decide the main question, offhand, by declaring spontaneous generation to be the origin of life; and then attempts to clinch his first assumption by assuming any other theory to be gross superstition, in that it involves a "belief in a supernatural miracle."

Logicians are tolerably familiar with the *petitio principii*, and have recognized several different qualities and degrees, such as the "direct" and the "indirect," the "disguised" and the "patent;" but this appears to belong to a new species. Its efficiency as a polemical weapon consists in the fact that the second assumption refers back to the first, and is held *in terrorem* over the heads of those who do not admit the first to be true.

I repeat, therefore, that the two vital questions at issue between atheistic and theistic evolutionists are

the ones that Professor Haeckel has thus summarily decided.

The first is, What is the origin of mind and organic life? Did they originate by spontaneous generation, or are they a divine heritage?

The second is, If we find evidence of their divine origin, does that involve a belief in a miracle?

And these are the questions which we will now proceed to discuss.

CHAPTER V.

NATURAL LAW *vs.* "SUPERNATURAL MIRACLE."

One of the Atheistic Strongholds. — Words and Phrases supposed to be Contumelious. — A Method of Compelling the Acceptance of "Scientific" Absurdities. — Potential Scare-Words, e. g. Haeckel's "Supernatural Miracle." — His Estimate of Deific Limitations. — The Question raised. — Is a Miracle Necessary to escape Spontaneous Generation? — Miracle defined. — Facts of Evolution exclude Miracle. — Everything happens in Regular Order, therefore not Miraculous. — To suppose Miracle to be Necessary is to prescribe Limitations to Divine Intelligence. — The Established Order of Nature the Antithesis of Miracle. — Beginning of Life necessarily in the Established Order. — Generation of Mind from Inorganic Matter would require a Miracle. — We must assume Natural Law to prevail.

ONE of the strongholds of the atheistic fraternity, considered as a proselyting agency, consists in their ability and their propensity to fright the souls of fearful adversaries by the employment of certain stock words and phrases. Experience has taught them that there is a very large and growing class of people who desire above all things to be considered "scientific." They have also discovered that this class can be stampeded into a belief in almost any kind of absurdity if it bears a "scientific" label, or if they are told that it is "unscientific" to believe otherwise. "Superstition" and "supernatural" are also very potent scare-words, and many a poor, timid, would-be scientist has been driven to cover by being told that if he believes in

God he is superstitious; and that if he presumes to believe in an intelligent antecedent cause of the phenomena of mind, he is a believer in the "supernatural." "Miracle" is another word of wonderful potency in the vocabulary of atheistic proselytism; and when it is reinforced by prefixing the word "supernatural," it is expected to be well-nigh irresistible.

Hence it was that Professor Haeckel did not neglect to close his so-called argument for spontaneous generation with the usual formula, which, reduced to its simplest terms, is this: "If you don't believe in spontaneous generation, you have got to believe in a supernatural miracle."

This, of course, is equivalent to a declaration that, even supposing an intelligent Deity to exist, he could not be the cause of the phenomena of life without violating or transcending a law of nature. To say that this is another of the pure assumptions of atheism, is putting it in the mildest possible terms. This, again, is the very question at issue between the atheistic and the theistic evolutionist: Is it necessary to presuppose a "supernatural miracle" as the only alternative to a belief in spontaneous generation?

In order to answer that question, we must first define the word "miracle." Webster's definition is, "An event or effect contrary to the established constitution and course of things, or a deviation from the known laws of nature; a supernatural event."

The definition of the Standard Dictionary is as follows: "2. *Theol.* An event in the natural world, but out of its established order, and possible only by

the intervention and exertion of divine power; a supernatural event."

Now, postulating, for the time being, the existence of an intelligent Deity, a Great First Cause of all things, what would it be necessary to prove in order to bring the phenomena of life, as shown in the monera, within the domain of the supernatural?

Three things are necessary, namely: —

1. It must be shown that those phenomena are "events in the natural world."
2. That they are "out of the established order."
3. That they were "possible only by the intervention and exertion of divine power."

It will be seen at a glance that but one of the conditions is fulfilled; namely, the beginning of life, as shown in the moneron, was "an event in the natural world." But it would be difficult to show that it was "out of the established order." Indeed, it would be difficult to show that the beginning of anything was out of the established order. This alone takes the event out of the category of miracle, no matter what the theory of causation may be; for if there is any event in any series that is, *ex necessitate*, in its established order, it is the initial event.

Again, it would be found quite difficult to show that, under the theistic hypothesis, the beginning of life was "possible only by the *intervention* and exertion of divine power."

"Intervention" means "the act of intervening or coming between; the state of being interposed; interposition."¹ The "intervention" and "exertion of divine power" in endowing the moneron with

¹ Standard Dictionary.

organic life, would therefore be a special act of creation; and, in order to show that it was miraculous, it must be shown that it was possible only by an act of special creation, "out of the established order." In other words, it would be necessary to show that divine power is unequal to the task of establishing a law of evolutionary development, in pursuance of which organic life could have a beginning or a progressive development without the necessity of an occasional miracle to correct that wherein the original plan was defective.

It will thus be seen that the element of miracle, or special creation, is necessarily absent: first, because the beginning of life could not have been "out of the established order;" secondly, because a miracle within the established order of nature is a contradiction in terms; and, thirdly, because the alleged necessity for a miracle implies a being of deficient intelligence and limited powers.

The established order of development is the very antithesis of miracle; and the latter can be assumed only when it is shown that something has been created out of that order. For instance, if it could be shown that a marsupial or a monkey or an agnostic was created first or out of its order, a miracle might be posited and its wisdom questioned. But the natural, or established, order of development proclaims the reign of intelligence and law.

The position of the atheistic evolutionist may therefore be restated as follows: —

Organic life, mind, and intelligence, with all their implications and potentialities, were spontaneously generated from inorganic matter; or else they were

especially created by a being of inferior intelligence and limited powers, by means of a "supernatural miracle."

I have already shown that the agnostics are confessedly without facts that point in the direction of spontaneous generation; and that they are confessedly compelled by necessity to assume that hypothesis as the only logical avenue of escape from the acknowledgment of the existence of an intelligent cause of the phenomena of life and mind. But, by what logical right they assume that an intelligent cause of those phenomena is necessarily a being of limited intelligence, does not appear from their writings. We must therefore infer that that conclusion is also a pure assumption, and one that is unrelieved by the mitigating excuse of necessity.

There is, in fact, no more logical necessity for supposing a miracle to be necessary in order to endow protoplasm with life and mind under the theistic hypothesis, than there is for classing spontaneous generation as a supernatural process. Nor as much; for the latter would be an event clearly "out of the natural order," so far as man is able to judge from any facts in his possession. That is to say, we know of no facts which give us a right to suppose that organic life and mind can have their origin in inorganic matter. But the universe is full of evidence that mind is only acquired by inheritance from an antecedent mind endowed with attributes and powers identical in kind with those inherited. We also know that there is no miracle in inheritance. And we have every right to suppose, judging by all the facts in our possession, that there is no antecedent mind

in inorganic matter from which the mental organism of the moneron could have been inherited.

There is, therefore, no *a priori* reason for positing a miracle on the assumption of an antecedent mind force or energy in the universe from which the moneron derived its peculiar powers. On the contrary, we must suppose that the advent of mind upon this planet was in pursuance of a natural law, at least until evidence to the contrary is found of sufficient weight to destroy our confidence in the constancy of nature. In the ensuing chapters of this book we will institute a quest for that law, "if haply we may feel after it, and find it," though, literally, "it is not far from each one of us."

CHAPTER VI.

THE ARGUMENT FROM HEREDITY.

Facts drawn from the History of Organic Evolution. — The Doctrine of Heredity. — Its Biological Definition. — The Authority of Darwin, Huxley, and Haeckel. — The Common Ground upon which Atheism and Theism can stand. — The Acknowledged Facts of Heredity. — The Necessary Presumptions. — Something to inherit. — Something from which to inherit. — The Character of the Inheritance. — Must exist actually or potentially in the Ancestor. — May differ in Degree, but not in Kind. — Man inherits from his Lower Ancestry back to the Moneron. — Whence the Intelligence of the Moneron? — The Law of Heredity presupposes an Ancestor. — Atheism says, "This is an Exception to the General Law." — Theism replies that Laws of Nature do not admit of Exceptions. — The Issue systematically examined. — The Necessity of going back to the Beginning of Organic Life. — (1) The Issue: Spontaneous Generation or Inheritance. — (2) The Facts agreed upon: (a) Potentials of Manhood in the Moneron — (b) Faculties acquired only by Inheritance — (c) Antecedent Intelligence presupposed — (d) Failure of Experimental Attempts to generate Life from Inorganic Matter — (e) Monera Destitute of Structural Organism — (f) Nevertheless endowed with a Mind — (g) Developed into a Structural Organism — (h) Moneron's Mind antedated its Physical Organism. — 3. What Facts support Theory of Spontaneous Generation? — Confessedly all Facts are against it. — Experimental Failures. — Quality of Evidence considered. — Negative Evidence not the Best. — But a Hypothesis without one Fact to support it is a Logical Absurdity. — Hypothesis Valid only when sustained by all Facts. — Otherwise no Constancy in Nature. — Atheistic Hypothesis Unique. — Has no Parallel in Bald, Unreasoning Assumption. — Reasons for Atheist's Attitude. — Doctrine of Evolution disproved Theory of Special Creations. — Hence

he "said in his Heart, There is no God." — Hence Necessity for inventing a Hypothesis. — Paralleled only by that of Topsy. — Haeckel's Statement of the Issue. — Spontaneous Generation or "Supernatural Miracle." — Equivalent to Spontaneous Generation or Divine Agency. — The Latter the Real Issue. — No Other Possible. — One is True and the Other False. — Logical Conditions considered. — Facts in Support of Hereditary Hypothesis next in Order.

HAVING failed to find either facts, phenomena, or valid reasons for the assumptions of atheism in regard to the origin of life, let us briefly examine the question from the theistic point of view, and see what facts there are to sustain the belief that the stream of life and mind has a source higher than the insensate earth.

In making this inquiry I shall continue to be guided by facts as they appear in the history of evolution, and I shall draw upon the same sources of information that I have thus far drawn upon, namely, the great masters of biological science. I shall also be guided very largely by their general conclusions. In fact, I shall carry those conclusions further than they have carried them. But I shall not deviate from the line of direction which they have indicated.

The particular doctrine to which I shall first invite attention is that of heredity. Heredity, in a general sense, is defined as the transmission of physical or mental peculiarities, qualities, etc., from parent to offspring. In the biological sense, it is defined as "the tendency manifested by one organism to develop in the likeness of a progenitor."¹

These are general definitions with which everybody is familiar. The doctrine as applied to biogeny,

¹ Standard Dictionary.

however, requires a more specific statement. In the language of Darwin, it is "that all the innumerable species, genera, and families of organic beings with which the world is peopled have all descended, each within its own class or group, from common parents."¹

And, in view of the facts of geology, it follows that all living plants and animals "are the lineal descendants of those which lived long before the Silurian epoch."²

"It is an obvious consequence of this theory of descent," says Huxley, ". . . that all plants and animals, however different they may now be, must, at one time or other, have been connected by direct or indirect intermediate gradations, and that the appearance of isolation presented by various groups of organic beings must be unreal."³

More specifically still, Professor Haeckel, as we have already seen, emphasizes the doctrine of heredity, and traces the line of descent back, through twenty-two gradients, from man to the monera.⁴ That Haeckel is a standard authority among atheistic evolutionists is a matter of current knowledge among scientific men everywhere. Darwin himself takes particular pains to indorse his views in general and in particular. Speaking of one of Professor Haeckel's works on the genealogy of man, Mr. Darwin has this to say:—

"If this work had appeared before my essay had been written, I should probably never have completed it. Al-

¹ *Origin of Species*, ed. i. p. 457.

² *Op. cit.* p. 458.

³ *Darwiniana*, p. 233.

⁴ See "*The Evolution of Man.*"

most all the conclusions at which I have arrived I find confirmed by this naturalist, whose knowledge on many points is much fuller than mine."¹

It will thus be seen that if there is any one point upon which the master minds of biogenetic science are in complete harmony, it is in subscribing to the proposition that man inherited his faculties from the lower animals, beginning with the lowest form of animal life,—the monera. A corollary of this, to which they all subscribe, is that the potentialities of manhood reside in the lowest form of animal life.

Now, it is not too much to say that this conclusion is the most important result of the study of the facts of organic evolution. From every point of view it is the grand result; for everything else of importance is included, and atheistic and theistic evolutionists can meet on this common ground, not of belief, but of knowledge. It matters not how devious or divergent the paths by which they have reached the goal, science and religion have at last found a basis of at least temporary reconciliation.

It is obvious that it must have been a potent agency that was capable of bringing atheism and theism into harmonious relations. That agency could have been nothing less potent than truth. And the process by which that truth was reached was that of inductive reasoning, — reasoning from the observable facts and phenomena of nature.

It was thus that atheism and theism alike discovered that there is not one fact in nature that

¹ *Descent of Man*, Introduction, p. 3

points to any other possible means of acquiring mental faculties than that of inheritance.

Now, let us see what is necessarily presupposed in the doctrine of heredity.

First, then, it presupposes something to inherit; and secondly, it presupposes an ancestor from which that something is inherited. Obviously nothing can be inherited that does not exist, actually or potentially; and nothing can be inherited unless there is an existent entity from which to derive the inheritance. These are self-evident propositions; and they may be reduced to one fundamental proposition as follows: —

An inherited faculty presupposes an antecedent entity endowed with a mind in which the identical faculty actually or potentially exists.

The faculty may be different in degree, but not in kind. It may be greater or smaller, as phenomenally manifested in the offspring, than it was in the parent; but it must be identical in kind. Thus, a child may exhibit wonderful faculties in which the parent may seem totally deficient; but it is self-evident that the same faculties existed potentially in the parent. On the other hand, the parent may have faculties largely developed in which the child may seem totally deficient; but that they exist potentially in the child is a proposition that no sane person can or will gainsay.

These are elementary principles in the doctrine of heredity; and that they apply with equal force to the phylogenetic series, from the moneron to man, is the elementary proposition of the theory of evolution. Eliminate them from the doctrine of evolution,

and the whole fabric falls to pieces of its own weight. If the doctrine of heredity fails, then fails the whole theory of progressive development of animal life, and the world is again plunged into the dark and dismal realms of superstition.

Now, let us apply the doctrine of heredity to the solution of the question of the origin of life. In other words, let us carry the principle of heredity to its legitimate conclusion. In doing so, we will bear in mind the promise not to deviate one hair's breadth from the line of direction which atheism has indicated as the one leading to ultimate truth, that is, to the ultimate solution of the problem of the origin of life and mind on this planet.

Beginning with man, therefore, and going back through the phylogenetic series to the moneron, atheism and theism will travel along harmoniously together, each subscribing to the propositions (1) that all faculties of mind are acquired by inheritance, and (2) that an inherited faculty presupposes an antecedent entity endowed with a mind in which the identical faculty actually or potentially exists.

When the moneron is reached, however, the atheist pauses, and protests against going any further in that particular direction. He has discovered what no scientist has ever found before, and what none but an atheistic scientist is capable of discovering, namely, an exception to a law of nature. The law of heredity is no longer suited to his purpose. It works the wrong way. Its implications are no longer atheistic; and he abandons it forever.

The theistic evolutionist, on the other hand, finds

in the moneron no exception to any law of nature with which he is acquainted. On the contrary, he finds in that little animal confirmation strong as proofs of Holy Writ that the law of heredity holds as good at the beginning of organic life as it does at every subsequent stage. That is to say, he sees the same necessity for the presupposition of a mind antecedent to the moneron, — a mind endowed with the same attributes and powers, differing only in degree, that he finds inherent in that lowest form of animal life.

Now, let us examine a little more systematically the logical attitude, respectively, of the atheistic and the theistic evolutionist, in regard to this the most important question raised by the facts of organic evolution.

It must be remembered, to begin with, that each of the two contending parties professes to be conducting the examination by the process of induction. Each professes to ignore all speculative philosophy bearing upon the subject, and to be guided solely by the facts and observable phenomena. And each has recognized the fact that it is at the very beginning of organic life in this world that we must find, if anywhere, tangible evidences as to its origin. This is in accordance with the elementary principle of all processes of rational investigation. It is recognized by every true scientist who seeks to interpret correctly the laws of nature. It is recognized by every lawyer who seeks to interpret the statutes of his country. Blackstone lays particular stress upon this principle as the only infallible guide to the correct interpretation of ambiguous statutes. "If the words are am-

biguous," says this greatest of English law writers (I quote from memory), "examine the context," and then the "subject-matter." If it is still ambiguous, consider the "reason and spirit of the law." In doing the latter, he lays down this simple rule: Consider "the old law, the mischief, and the remedy." That is to say, first find what the old law was; secondly, what was the "mischief" or evil in the old law that required a remedy; and, thirdly, what was the remedy devised by the new law. In other words, we must go back to the very beginning if we would find facts that will enable us to interpret correctly a law either of God or of man. It is this principle that every true lawyer applies to the whole system of jurisprudence under which he practises. It is this principle that every true scientist applies to the investigation of every problem of nature. It is this principle that I have sought to apply to the investigation of the question, What is the origin of life on this planet?

I repeat, therefore, that if there are existent facts that bear directly upon the question of the origin of life, we must look for them at the beginning of life.

We will now group the facts and arguments bearing upon this question in the following order: (1) The issue between atheism and theism; (2) The facts agreed upon; (3) The facts in support of atheism; (4) The facts in support of theism.

The issue between the atheistic and the theistic evolutionist is this: the former holds that life and mind originated by spontaneous generation from inorganic matter; the latter holds that life and mind were acquired by inheritance from an omniscient mind.

The facts and principles tacitly agreed upon by both parties are substantially the following: —

First, that in the mind of the moneron reside the potentialities of the mental faculties of manhood.

Secondly, that in the phylogenetic history of organic life there is no instance of the acquisition of mental faculties in any other way than by inheritance.

Thirdly, that an inherited faculty necessarily presupposes an antecedent intelligence identical in kind.

Fourthly, that all experimental attempts to generate organic life from inorganic compounds have utterly failed.

Fifthly, that the moneron consists of a mass of absolutely undifferentiated, structureless plasson or primitive slime.

Sixthly, that it is, nevertheless, endowed with a mind organism, and that it performs all the functions and exhibits all the essential phenomena of organic life, namely, sensation, movement, nutrition, and reproduction; all this being antecedent to, and independent of, reason, experience, or instruction.

Seventhly, that this mental energy thus resident within the moneron is the power which caused its own development from an undifferentiated mass of plasson to the differentiated or nucleated amoeba; thus taking the first forward step in the process of organic evolution.

Eighthly, that the mind of the moneron antedated its physical organism, and was, as a matter of fact, the antecedent cause of physical organism.

These are facts which will not be denied by either atheist or theist. They are either specifically or tacitly affirmed by both; and they are essential to

both, paradoxical as it may seem. They are essential to the atheistic evolutionist because they are essential to the general hypothesis of evolution. They are essential to the theistic evolutionist for the same reason, and also because they are essential to the hypothesis of theism.

It is now in order to inquire what facts there are to sustain the theory of spontaneous generation. The reader has already anticipated the answer. There is not one fact that points in that direction. This I have hereinbefore pointed out and emphasized by quotations from Professor Haeckel's works, in which he confesses that the theory cannot be verified, but consoles himself by the declaration that it cannot be disproved. All experimental failures to develop or generate organic life from inorganic matter count for nothing in his mind. Candor compels the admission that it is not the best quality of evidence. It is always difficult and often impossible to prove a negative. But it must also be remembered that, logically, no one is bound to prove a negative until the side holding the affirmative has made at least a *prima facie* case. In this instance not only has this not been done, but, confessedly, it cannot be done.

The evidence for spontaneous generation, therefore, may be set down as absolutely less than no evidence at all; for the only facts bearing upon the case are against the hypothesis. I submit, therefore, that, considered as a scientific conclusion based upon inductive processes of reasoning, the hypothesis of spontaneous generation is simply a logical absurdity. Induction presupposes at least one fact

pointing in the direction indicated by the hypothetical conclusion.

Moreover, an axiom recognized by every logician and by every scientist worthy of the name, is that, *if a hypothesis is not sustained by all the facts bearing upon the question, it is necessarily wrong*. This axiom is founded upon two fundamental truths: namely, (1) that no fact in all this universe is inconsistent with any other fact; and (2) there are no exceptional cases in the operation of nature's laws. These may all be condensed into that most fundamental and important of all scientific truths, namely, that which is affirmative of the *constancy of nature*.

The hypothesis of spontaneous generation is, therefore, in absolute and unqualified derogation of each and all of these fundamental axioms. Considered, therefore, as a proposition emanating from a body of scientists who are constantly proclaiming their devotion to the principles of induction, it must be considered unique, to say the least; for, if it has ever been paralleled for bald assumption without the shadow of a shade of evidence, history has not recorded the fact.

Now, there must have existed some overwhelming logical necessity for such a flagrant violation of all the principles that are supposed to prevail in the scientific investigation of the phenomena of nature. It will be recalled that Professor Haeckel confessed that the hypothesis of spontaneous generation was a mere assumption, and that it was prompted by necessity. A few words will explain this necessity, and how it arose.

It will be remembered that, when the doctrine of

organic evolution was first promulgated, it was regarded as an atheistic science. It was natural that it should be so regarded, since it was promulgated by atheists; but especially for the reason that the theory substituted progressive development for the old doctrine of special creations of genera and species in the organic world. Having succeeded in disproving the latter doctrine, the atheistic scientists imagined that they had "eliminated God from the universe." That is to say, having discovered proximate causes (*causæ efficientes*) for a great many phenomena which had before been supposed to be due to miraculous intervention, they jumped to the conclusion that there was no necessity for final or purposive causes (*causæ finales*) for anything. Hence they determined either to find a "mechanical cause" (Haeckel) for every phenomenon or invent one out of hand. Heredity served their purpose admirably until they reached the very beginning of animal life. Here was the crucial point, here the parting of the ways. If they carried the doctrine of heredity to its legitimate conclusion, it presupposed an intelligence antecedent to the monera; and that intelligence, of course, could be none other than that of omniscience. But as that did not comport with their predetermined atheism, they had no other resource but to invent. And so they invented. They invented a theory of the origin of life and mind on this planet. The invention may have been original with them, but it was not new; for it had been exactly paralleled by the late lamented Topsy.

The most important part of Professor Haeckel's remarks on this subject consists of the confession

which he inadvertently makes when he sets forth the dire consequences of refusing to accept the theory of spontaneous generation. He who does not accept that theory "has no other resource but to believe in a supernatural miracle," are the portentous words of the great atheist.

Considered as an atheistic proselyting agency among the feeble-minded, these words are potent, as I have already shown.

Considered as a statement of fact, they are untrue, as I have hereinbefore pointed out; for a miracle cannot be predicated of an event occurring in its natural order.

But, considered as a scientific declaration of the narrow limits of the field of inquiry for causation, they are profoundly significant.

It is equivalent to saying, "There are but two possible theories of causation, — one is spontaneous generation, and the other is divine agency."

The value of this declaration consists in its obvious and undeniable truth. The ingenuity of man is not equal to the formulation of any other rational hypothesis to account for the origin of life on this planet. One of these hypotheses is true, and the other is false. There is, and there can be, no middle ground. Either positively excludes the other; for they are antithetical.

This declaration by Professor Haeckel is the exact equivalent, in its implications, of what I have been contending for all along. It is a declaration that if the question of theism or anti-theism is ever to be settled by induction, it must be done at this point, — the beginning of organic life. In the mean

time, or until the question is settled at this point, all other questions pertaining to the subject-matter are purely subsidiary, incidental, and speculative.

I must not, however, be understood as admitting that, even if it could be demonstrated that organic life could be generated from inorganic compounds, the existence of an intelligent Great First Cause of all things would thereby be disproved. On the contrary, the old arguments for the existence of such a Deity would not be diminished in value in the least. It would simply be putting that question one step farther back, but otherwise leaving it just where it was found, — in the domain of speculative philosophy. On the other hand, if an inductive examination of the question reveals the Great First Cause in the lowest form of animal life, that is to say, if the facts admit of no other possible interpretation, then every teleological argument that has ever been made is invested with a scientific value and significance that it never before possessed.

In the mean time I am not unaware of one logical advantage possessed by the other side in the discussion of this question. I am fully impressed with the value of the scientific axiom that "we have neither occasion nor logical right to ascribe any phenomenon to supermundane agency so long as it can be explained under principles of natural law with which we are acquainted."

In my former works¹ I have strenuously insisted upon the never-failing value of this axiom; and I have taken occasion to apply it to the phenomena of

¹ See "The Law of Psychic Phenomena" and "A Scientific Demonstration of the Future Life."

so-called spiritism. And I have undertaken to show that the fatal weakness of spiritism consists in the fact that all its phenomena are easily explicable under natural laws, the existence of which the spiritists do not themselves deny.

I just as strenuously insist upon the application of this rule to the subject under present consideration. But I also claim the right to trace to a supermundane source any phenomena that admittedly cannot be explained by reference to any known law; and, *a fortiori*, I claim that right in cases where all the known facts conspire to disprove the only possible hypothesis under which the necessity for a supermundane explanation could be avoided.

I admit that it requires a very strong array of reasons to justify a scientist in seeking in supermundane realms for an explanation of phenomena in the organic world. But it demands still stronger reasons to justify him in ignoring facts, belittling their importance, or misrepresenting their significance, when conducting an inductive inquiry. Still stronger reasons are required to justify a scientist in postulating a theory of causation that is destitute of either fact or reason to support it; and nothing can justify him in belittling the intelligence of possible opponents by charging them in advance with gross superstition.

Having now definitely ascertained that there are neither facts nor reasons to sustain the theory of spontaneous generation, let us next in order inquire what facts there are to warrant the acceptance of the hypothesis of hereditary transmission from an antecedent mind.

CHAPTER VII.

THE ARGUMENT FROM HEREDITY (CONTINUED).

The Character of the Heritage. — If essentially Divine, it is Presumptive Evidence of Divine Origin. — If no other Source is Possible, the Evidence is Conclusive. — No other Possible Source has been shown. — Examination of Facts showing Divine Attributes in the Moneron. — They are the Elementary Facts of Evolution. — They demonstrate Intuitive Knowledge of Laws of its Being. — Explanations on other Grounds Pure Assumptions. — Begging the Question. — Knowledge measured by Actions. — Adaptation of Means to Ends the Test of Intelligence. — Attributes summed up. — Intuition. — Antecedent to Organism. — Has Power over Unorganized Matter. — Creative Power. — Creates New Species. — Transmits by Inheritance. — Dominant Instinct Creative. — Dominant Emotion Altruistic. — Potentially Divine. — All Essential Attributes of the God of Christian Faith. — Differing only in Degree. — Knowledge, Power, Love. — Whence came they? — The Question for Inductive Science. — Science knows of but One Way of acquiring Faculties, — Inheritance. — By Analysis of Faculties it learns the Character of Ancestry, and can predict Character of Posterity. — No Exceptions to Nature's Laws. — Divine Faculties necessarily a Divine Heritage. — Atheistic Objections. — "Supernatural Miracle." — Objection Invalid. — Miracle cannot be posited on Intelligence. — Natural Law always presumed. — Electric Phenomena originated in Cosmic Electrical Energy. — Mind originated in Cosmic Mind Energy. — Atheistic Theory a Recrudescence of Fetichism. — Mind in Inanimate Matter, e. g. — No Disrespect to Fetich Worshipper. — Lodestone does not generate Magnetism. — Proto-plasm does not generate Mind. — Each Substance is a Medium of Manifestation of a Cosmic Energy. — Can One Mind be produced from Another? — Reproduction an Example. — Reproduction by Fission Demonstrative. — The Monera indefinitely Divisible. — Each Particle a Distinct Mind Organism. — Reproduction a Mental Act. — Inferences as to Divine Methods. — The Mind of each Sentient Creature a Part of the Divine Mind. — Logical Rules of Investigation. — The Law of Parsimony. —

All violated by Atheism. — Truth does not necessitate a Violation of Logical Principles. — All Essential Truth may be known by Inductive Investigation. — Application of Rules. — Logical Axioms: (1) No Effect without a Cause; (2) Cause always Commensurable with Effect. — They are “Universal Postulates.” — We may therefore always *know* the Nature of a Cause by observing its Effects. — Nature never erects False Signals. — Under this Law we *know* that the Cause of Mind is Mind. — Under the Law of Heredity we know its Attributes, — that it is an Organized, Conscious Intelligence, a Personality, a Creative Intelligence, a Constant Energy, Omniscient, Omnipotent, Altruistic. — No other Hypothesis accounts for All the Facts. — If Nature is Constant, we know that God is our Father.

THE presentation of the facts and phenomena which confirm the theory of divine inheritance of mental attributes will necessarily involve more or less of recapitulation of what has been already mentioned. But at that risk I deem it desirable so to group the facts as to give the reader a perspective view of the whole.

The first fact to be considered is the character of the heritage. This is of the first importance; for its evidential value must be measured by its character. That is to say, the quality of the thing possessed, and alleged to be an inheritance from a given ancestor, must be identical with that known or presumed to belong to said ancestor. Otherwise no presumption could arise from the character of the thing possessed in favor of the verity of the allegation. If, however, it is found to be identical with that known to belong to the alleged ancestor, the presumption is strongly in favor of the truth of the allegation. And this presumption is converted into conclusive evidence when it is known that there is no other possible source from which such a heritage could be derived. Thus, if a divine ancestry is claimed, the

inheritance must be shown to be in its essence divine. Otherwise the heritage in itself possesses no evidential value bearing upon the question of its origin. But if it can be shown to be divine in its essential characteristics, the presumption is in favor of the claim; and said presumption is greatly strengthened in the absence of evidence of any other possible source of inheritance.

Thus, if the mind of the moneron is shown to be invested with the essential attributes of omniscience and omnipotence, differing only in degree and not in kind, the presumption is in favor of the theory of divine inheritance. And in the absence of evidence of any other possible source of inheritance, its mental attributes possess an evidential value of an order so high as to require conclusive evidence to the contrary to rebut the presumption. In the absence of such rebutting evidence, if it could be shown affirmatively that there is no other possible source of inheritance, the evidence in favor of divine inheritance would be conclusive. But as affirmative proof of a negative proposition is in any case difficult to procure, and in this case quite impossible, we must rest content with the very high order of presumptive evidence which is ours in the absence of any evidence whatever to rebut the presumption.

Fortunately, however, the claims of atheism are of such a character as to be equivalent to a very high order of evidence of their own falsity. When a party to a controversy sets up an allegation that is absurd on its face, and confesses that he has no proof whatever that it is true, it is equivalent to an admission that he has no case. Then, if it is also

shown that all the known facts tend to disprove his allegation, presumptive evidence on the other side is converted into the equivalent of conclusive evidence.

And this is exactly the status of the controversy between theism and atheism over the question of the origin of life. A high order of presumptive evidence that life is a divine inheritance is met by the theory of spontaneous generation, — a hypothesis admittedly without a fact to sustain it, — an abandonment at once of the law of heredity and of the methods of induction; a reckless leap into the cloudy realms of speculative philosophy, sans reason, sans probability, sans truth, sans everything save an insensate determination to avoid the obvious truth that the phenomena of intelligence must have an intelligent origin.

There is, for the agnostics, one way of temporary escape from their logical dilemma. That is to say, there is one way by which they could retain a temporary hold upon the law of heredity; and that is by affirming that mind exists in the rocks and mud at the bottom of the ocean. This would give to the monera an earthly ancestor, endowed, of course, with the same quality of mind, — the same potentials. But even this would only serve to put the real question one step farther back; for if it could be demonstrated that every atom of matter composing this earth is endowed with a mind, the question of that mind's origin would still remain just as it is now, and the same arguments would hold good.

But I prefer not to lead them into the mire and mud of speculation without facts further than they

have chosen to go. I prefer to remain upon the solid ground of truth as we find it, and laws as we know them. Facts are divine revelations. Speculative philosophy is guesswork. We know something of the mind manifested in the monera; and we know something of the essentials of the law of heredity. But we know nothing of a mind existing in mud; and we know of no process of acquiring a mind except by inheritance.

Now let us re-examine those faculties possessed by the moneron which proclaim its divine pedigree:—

In the first place, it is admitted by all evolutionists that it is invested with the potentialities of manhood. That is to say, it possesses in rudimentary form all the activities, mental and physical, to be found in man. "It transforms food into tissue and other metabolic products, and this is the basis of all the nutritive activities and processes of the higher animals. It can move parts of itself [pseudopodia] and is capable of locomotion, and this is the basis of all movement in the higher animals brought about by bones and muscles. It can feel a stimulus and respond, and this is the basis of the sensory faculties of the higher animals. It can reproduce itself by segmentation, and this is the basis of reproduction in the higher animals. On dividing it inherits the actual qualities of the parent mass, and this is the basis of heredity."¹ In short, it possesses the instinct of self-preservation, and this is the basis of all the self-regarding emotions and activities characteristic of man; and it pos-

¹ See Professor Gates in "Therapist," December, 1895.

sesses the instinct of reproduction, and this is the basis of all the altruistic, or other-regarding, emotions and activities that characterize the noblest manhood.

No one will dispute these propositions; for they are the elementary facts in the history of organic evolution. Nor can any one successfully controvert the conclusion that the possession of these attributes demonstrates the proposition that the moneron is endowed with an intuitive knowledge of the essential laws of its being. It is no answer to this proposition to say that its acts are "automatic," and therefore without intelligence; for that is begging the question. Besides, it is a contradiction in terms to say that an intelligent action can be performed without intelligence. That its actions are prompted by intelligence is demonstrated by the fact that all its acts are adaptations of means to ends. Nor does it do to say that its actions are "unconscious," for that, too, is begging the question. Again, it is a contradiction in terms to say that an intelligent adaptation of means to ends is an unconscious act. To say that it is reflex action, and therefore not conscious, is another way of begging the question; for reflex action itself is an adaptation of means to ends, as I have already pointed out. All these terms are pure inventions, apparently concocted either to conceal ignorance of the real significance of instinct, or to belittle that significance in the interest of materialism. In this, as in every subject of human investigation, one grain of fact, intelligently observed and interpreted without prejudice, outweighs all the theories that were ever con-

cocted for the sole purpose of evading the obvious significance of the phenomena. The only way to ascertain what a sentient creature knows is to observe what it does. If it acts intelligently, it must be presumed to be intelligent until the contrary is demonstrated. If it observes the laws of its being and invariably acts in accordance therewith, it must be presumed to have a knowledge of those laws, even though materialistic science may fail to find the source of that knowledge in the material world. In short, if it acts just as an intelligent, conscious being ought to act, it must be presumed to be intelligent and conscious until the contrary is clearly proven.

Applying these facts and principles to the monera, it will readily be seen, not only that the evolutionists are warranted in their asseveration that it contains the potentials of manhood, but that I am justified in declaring that the mental attributes of the moneron cannot be adequately described except in terms that apply to omniscience and omnipotence.

We may now sum up the attributes and powers of the mind of the moneron which are essentially and potentially divine, as follows:—

1. It apprehends by intuition the essential laws of its being; that is to say, all essential truth pertaining to its state of existence, its stage of development, and its environment.
2. It is antecedent to physical organism.
3. It has power over unorganized matter.
4. It has the power to create a physical organism out of unorganized matter.
5. It has the power to create other mental organ-

isms, complete and individualized, out of its own mental organism, by a simple act of volition (reproduction).

6. It has the power to create new species (*amœba*).

7. It transmits by inheritance its essential characteristics and powers.

8. Its dominant instinct is creative.

9. Finally, its dominant emotion is essentially altruistic.

Can the mind of man conceive of a finite, sentient creature, possessing in essential purity more god-like attributes than are here enumerated?

By extension alone to infinity they correspond to the highest conceptions of God, — the God of Christian faith, — a God of infinite knowledge, a God of infinite power, a God of infinite love.

Whence were these attributes and powers derived? That is a question for science to answer; and we propose to submit the question to that august tribunal, stipulating only that it shall employ the inductive method of conducting the investigation, and that its decision shall be founded upon observable facts and known laws. The facts are before us, and no one disputes them. What of the laws?

Science tells us that it has conducted an exhaustive investigation of facts, covering a period of a somewhat indefinite number of æons, but extending from the monera to man, and that it has found that the law of heredity is universal. In other words, science knows of no law under which a faculty of mind can be acquired except that of heredity. It knows that innumerable facts exist bearing upon this question, and that they all conspire to demon-

strate the universality of that law. Applying the infallible test of the validity of a law, — namely, the ability to make inerrant predictions under it, science avers that it can, by an analysis of the mental faculties of any sentient creature, predict with absolute certainty the quality and kind of mental faculties that its offspring will possess; and that it can, with equal certainty, determine the character of the faculties possessed by its ancestor. If therefore there is an exception to this law of hereditary transmission of mental attributes, science knows nothing of it. That is to say, science has never yet discovered one fact in nature that hints of the existence of any means of acquiring mental faculties other than that of inheritance from an ancestral mind endowed with faculties identical in kind.

Planting himself, therefore, upon the facts that are known to exist, and upon a law that is universal, and insisting upon the strict application of the processes of induction as being the only legitimate method of scientific inquiry, the theistic evolutionist declares that *divine faculties are and can be nothing less than a divine heritage.*

Now let us inquire, What possible objection can science offer to this conclusion? Practically but one objection has ever been offered; for all others are but varying forms of that one. Professor Haeckel has advanced it in its simplest, crudest, and most direct form. His objection is that its acceptance requires us to believe in a "supernatural miracle," — i. e., a special creation by "supernatural" means. This objection, if it had the slightest adumbration of truth in or about it, would be valid

and conclusive. For no true scientist can accept a hypothesis that involves a belief in a miracle, or in anything supernatural, much less a "supernatural miracle." The anti-theistic scientist does not believe that there is any God to perform a miracle; and the theistic scientist entertains too profound a reverence for God, a conception of his wisdom and power too exalted, to admit for one moment that his original plan of creation was so imperfect that it became necessary to supplement it by special creations or miracles.

Is it necessary, then, to posit a miracle, or a special creation, on the basis of a belief in divine inheritance of mental faculties? Clearly not. It is only necessary to posit an intelligent origin for intelligence; a mental origin for mind; an intelligent creative energy, or a being endowed with intelligence and creative energy, as the progenitor of other intelligent beings who are endowed with the same powers. This is the natural order of things so far as scientific research has been able to inform mankind; and the burden of proof rests upon the one who seeks to show that the same law did not prevail at the beginning of organic life. Being in the natural order of inheritance, the event itself must be presumed to have occurred within the domain of natural law. A miracle cannot be posited upon a showing of intelligence.

It requires no greater strain upon the credulity of man to suppose a mental origin for mind than it does to suppose an electrical origin for electricity. We might just as reasonably deny that the electricity of the earth has its source in the electrical energy of

the universe, as deny that the mental energy which we see manifested on this planet has its source in a universal mind. It would be just as reasonable to hold that electricity has its origin in its terrestrial non-conductors, as to hold that organic life and mind had their origin in inanimate, inorganic, insensate, terrestrial matter. Not that I would insinuate that the two suppositions are logical equivalents; for they are not. The electrical supposition would be simple lunacy. But the supposition that intelligence exists in stones and mud is the fundamental hypothesis of fetichism. I hasten to say that this last remark is not intended as a slur on the religion of the fetich worshiper. Far from it. It is in the nature of a vindication, for his theory is just as well fortified by facts as is that of the atheistic "scientist." Considered as inductive philosophies, therefore, they are entitled to equal consideration. In point of fact, the parallelism is about complete. Thus, (a) the two theories of the ultimate origin and source of life and mind meet in the same inanimate object. (b) They are equally destitute of facts or of reason to support them. (c) The same facts of nature unite in protest against both theories. (d) The fetichist worships the inanimate object or substance in which the two theories locate life and mind. (e) The atheistic philosopher elevates his materialistic science into a fetich and worships that. Speaking, therefore, with the careful precision of a definitive formula, it must be held that the atheistic theory of the origin of mind and life is a recrudescence of fetichism.

To return to our electrical comparison, I repeat that it is just as reasonable to suppose that the mental

organisms of the monera are segregated parts of a universal mind as to suppose that the electricity which we find in the earth is a part of the electrical energy of the universe. Each is a form of energy, — a mode of motion, if you please. Each is universal and all-pervasive, so far as we are able to perceive. The universal electrical energy, not by means of a miracle, but in pursuance of a universal law, impinged upon this planet and found its sphere of local activity in the various substances best adapted to the purpose. In one substance it produces certain phenomena; in other substances certain other phenomena. In some cases it appears to be entirely severed from all connection with the universal. It can be artificially detached and made to do work, as in an electrical machine or in a magnet. In the latter form we find that nature has stored it up in the lodestone or magnetic iron ore, etc. That it is separated only in appearance or in its visible effects, is quite probable. In other words, that it still maintains a connection with the universal electrical energy may be conceded.

In like manner it may be supposed that the universal energy which we call mind seizes upon the proper material of this earth, pervades it, and produces its corresponding phenomena; and in like manner we find that this energy apparently emanates from the universal energy. It is individualized in the moneron and its posterity, and apparently leads an independent life. I say "apparently," for it is not necessary to suppose that it has severed its connection with the universal mind, any more than it is necessary to suppose that the electrical energy of the

earth is dissociated from that of the whole universe. Nor is it necessary to posit a miracle in either case. On the contrary, the phenomena in each case proclaim a universal law, and reveal a universal, all-pervasive, omnipresent energy,—not inherent in matter, but immanent in the universe. In each case certain forms or compositions of matter are required as a basis for the phenomenal manifestation of its energy. That is all. In neither case does the medium generate the force or energy. Magnetic oxide of iron, or an iron bar, is a good medium for the manifestation of magnetic phenomena. But the magnet does not generate the force. That force comes from without,—from the great source of electrical energy, which is coextensive with the universe. It is simply a form of electrical energy that finds a medium of manifestation in certain material compounds.

Protoplasm is the physical medium through which mind manifests itself. In this sense it is “the physical basis of life,” as Huxley terms it; but in no other. It does not generate mind. That, too, comes from without,—from an eternal source,—a constant, ever-present, all-pervasive force or energy that finds in protoplasm a medium through which the phenomena of life and mind may be manifested on this planet.

Many will ask the question, “How can a mind be segregated from the Infinite mind so as to become an individualized independent entity?” Some will employ the usual atheistic formula for evading unwelcome conclusions, and cut the matter short by declaring that it is “unthinkable.” Others will look

wise, shake their heads, and declare that it is "inconceivable;" and, because no one can tell just how it is done, many will declare that it is "impossible."

Obviously no one can tell how the Almighty does his wondrous work; and it is not a legitimate question to ask. The real question is, first, Can one mind be segregated from another and both become individualized, independent entities? If the facts of nature answer this question in the affirmative, we may well suppose that the wisdom and power of God are equal to the task of doing his part of the work in his own way. The answer, then, is that the mind of every living creature on earth was derived from another mind. The act of reproduction by unicellular organisms is a tangible answer to that question; for it can be witnessed at any time by any one who will take the trouble to look. The fission of the amœba or of the moneron is an act by which one mind is segregated from another, each being and remaining intact; and as each in turn reproduces itself in the same manner, and so on indefinitely, it follows, as Weisman remarks, that the unicellular organism is "potentially immortal." And if Weisman's "germ-plasm" theory is correct, each living creature contains within itself a part of the original moneron from which it descended. This may also be true under the "gemmule" theory of Darwin and his followers.

Be that as it may, the fact remains that the segregation of one mind from another, in both sexual and asexual reproduction, is one of the universal facts in nature. It is, indeed, the one essential fact in heredity.

One further consideration should not be lost sight of, and that is that reproduction is largely, if not wholly, a mental act or function. Those who hold that physical organism generates mind will not admit this to be true so far as the higher animals are concerned. But no one can deny that it is true of the moneron; for there is no physical organism in that creature to complicate the question. The mind that invests it acts wholly upon unorganized matter. The act of fission, therefore, was wholly due to mental energy. It was an act of volition prompted by an emotional impulse. And that impulse was the primordial manifestation of the constant force or energy that lies at the bottom of all progressional development in the physical, mental, moral, and religious worlds. It was primordial altruism, — the first act of a sentient creature prompted wholly by the other-regarding impulse, — the first manifestation of love on this earth, the first tangible exemplification of mind's creative power.

Again, a very important point to be noted is that the plasson which constitutes the monera presents a tangible exemplification of what must be true of the divine mind if it is true that the mind of each sentient creature is "a spark of the divine intelligence," — "a part of the mind of God." If that theory is true, it necessarily follows that the divine mind is infinitely divisible. It is a conception difficult to grasp, and impossible to formulate in adequate finite terms; and yet it has been more or less vaguely entertained by every theist who believes in the Christian doctrine of the fatherhood of God or in the divinity of man. In the moneron, however,

we find a concrete example of the indefinite divisibility of mind.

"The monera are," says Haeckel, "homogeneous and structureless; each part of the body is every other part. Each part can absorb and digest nourishment; each part is excitable and sensitive; each part can move itself independently; and, lastly, each part is capable of reproduction and regeneration."¹ Again he says: "The most remarkable of all monera is the *Bathybius*, which was discovered by Huxley in 1868. This wonderful moneron lives in the deepest parts of the sea, especially in the Atlantic Ocean, and in places covers the whole floor of the sea in such masses that the fine mud in the latter consists, in great measure, of living slime. The protoplasm in these formless nets does not seem differentiated at all; each little piece is capable of forming an individual."² And, it may be added, it follows that "each little piece" may be still further divided, either artificially or by reproduction, and so on, indefinitely.

Here, then, is a concrete fact, easily observable under the microscope, demonstrating not only that one mind can be segregated from another mind, but that mind is in itself indefinitely divisible. Moreover, it reveals a law of mind energy which not only lies at the basis of all the subsequent phenomena of heredity and evolutionary development, but requires, as a necessary hypothesis, under the law of heredity, an antecedent mind energy identical in all essential characteristics. To use the language which Pro-

¹ *The Evolution of Man*, p. 48.

² *Op. cit.* pp. 48, 49.

fessor Haeckel employed with such transparent ingenuousness in reference to the theory of spontaneous generation, "this assumption is required by the demand of the human understanding for causality." Or, to use the language of Professor Zoellner in reference to the same "spontaneous" theory, it is the "condition necessary to the conceivability of nature in accordance with the laws of causality."¹

I submit that I have a right to employ these expressions in reference to my theory, and that their authors have not that right with reference to the theory of spontaneous generation. The "demand of the human understanding for causality" is not supplied by assumptions without facts to sustain them; nor is the "conceivability of nature in accordance with the laws of causality" facilitated by the assumption of an inconceivable cause.

There is a law of induction known to logicians (and sometimes observed by them) which is denominated "the law of parcimony." It was first formulated by Sir William Hamilton, and applied by him to the inductive investigation of the laws of the human mind. The rule is "that no fact be assumed as a fact of consciousness but what is ultimate and simple."² It has since been extended into a general rule of inductive observation, and defined as "the principle that nothing shall be assumed as a fact that is not such in reality."³ Another definition is "sparingness, as in assumptions,"—which gives a little more latitude. It is a good

¹ Quoted by Haeckel, *op. cit.* p. 33.

² *Metaphysics*, Lect. XV. p. 186.

³ *Standard Dictionary*.

rule, and, as before remarked, it is sometimes observed by logicians, sometimes not. But, to do entire justice to those who do not observe the rule, it must be said that they depart from it only when driven by "necessity," as in the case of those who entertain the theory of spontaneous generation. In that case they boldly abandon the law of parcimony and assume everything, even the very question at issue; and the only justification offered is the plea of "necessity."

Now, it may be confidently affirmed that truth—that is, any truth that it is important for man to know—never drives the logician to any such extremities. Truth is always fortified by facts, laws, and self-evident logical principles or propositions. The facts and the laws may not be known, of course, and hence the truth may lie hidden pending investigation; but they exist, nevertheless, and sooner or later man will find out all that it is important for him to know. Again, the facts may be known and the laws may be in doubt. In that case hypothesis is a legitimate instrument of logic. But when that instrument is employed there are two inexorable rules that must be observed if truth is the object desired. The first is that there must be *some* facts to sustain the hypothesis; and, secondly, one adverse fact is sufficient to disprove the soundness of any hypothesis.

But when the salient facts of any subject of investigation are known, and when some of the fundamental laws governing its phenomena are discovered, logical induction will generally be found equal to the task of ascertaining the essential truth without the

necessity of assuming anything but the constancy of nature.

Now, let us apply these principles to the subject under consideration, — the origin of life and mind. The facts have been enumerated in the preceding pages. They are the facts and phenomena of organic and mental evolution, beginning with the moneron and ending with man. The laws which correlate the phenomena and explain the facts, so far as they have been discovered, have been set forth. They are the laws of heredity and of progressive development. The self-evident logical axioms are the following: —

1. Every effect or phenomenon in nature has an efficient and appropriate cause.

2. Every cause is commensurable with its effects or phenomena.

The first of these propositions is an axiom which everybody admits to be indisputable. The second is more in the nature of a truism, — the equivalent of saying that light is caused by a luminous body; that electrical phenomena are caused by electricity, etc. It is but another way of saying that like produces like, — that like causes produce like effects; that rain causes dampness; in short, that all causative agencies produce effects that correspond to the nature of the causes. This is what Mr. Herbert Spencer would designate as the “universal postulate;” for “the inconceivableness of its negation” shows that it possesses “unsurpassable validity.”¹ That is to say, it is impossible to conceive the negative of the proposition that cause and effect are commensurable.

¹ Principles of Psychology, ii.— 2, p. 407.

To deny this postulate is to assume an attitude of pure and simple negation; it is to deny the fact of the constancy of nature,—to deny that the phenomena of nature possess any significance whatever.

It would be equivalent to an affirmation that the phenomena of nature are to be interpreted by the rule of contraries. It would be equivalent to a wholesale denial of the validity of induction as a process of scientific inquiry.

Now, let us see what are the logical implications of the affirmative of the postulate. Simply this: that by an examination of the nature of effects or phenomena we can always *know the nature of their efficient causes*. We may not be able to drag the cause to light so as to weigh it in a balance, dissect it with a scalpel, or exhibit it on a stage; but we can *know its nature* with just as great a degree of certainty as if we could do all those things. Thus, when we see a spring of water gushing from the side of a mountain, we may not be able to reach its source even by tunnelling the mountain, for it may be many miles distant. But we know the nature of that source. We know that it is a body of water. “But,” some one may say, “suppose that nature, in some hidden alembic within the mountain, generates the water from its constituent elements? Its source would not then be ‘a body of water.’” To this it may be replied, first, that it would be a body of water, no matter where its elements were combined. But, waiving that point, we should know the nature of the cause, nevertheless. We should know with absolute certainty that within that hidden alembic certain gases had united, in certain definite proportions, to form

the water that constituted the source from which the spring was derived. If an analysis of the waters reveals the presence of organic impurities, we know that its source, or its channel, was polluted by organic impurities. There is never any mistake about it, and we never attribute organic impurities to inorganic matter. The logic of atheism alone is equal to that.

The spring of water teaches another lesson to science which is often overlooked. It is that a stream never rises higher than its source. This is true, not only of flowing water, but of every force in nature. That is to say, the flowing stream is a symbol in that respect of every other force. Not one of nature's forces, as developed or phenomenally manifested on this planet, equals its potential energy as it exists in the Cosmos. Atheism has sought to make an exception of the greatest of all — the mind energy of the universe — by locating its source in the inorganic world. But there are no exceptions to the laws of nature.

This, however, is a digression. The point I wish to illustrate is the commensurableness of cause and effect, by showing that science commensurates all the facts, laws, principles, and elements of both cause and effect in that simple phenomenon of nature, — a spring of water. They are all interrelated and interdependent, but not more so than in any and every case where causes operate to produce effects.

A law as universal as the law of gravitation may now be formulated thus: —

All the causative forces of nature are commensurable with their effects or phenomena.

It follows that something of the nature or salient

characteristics of every causative force may be learned by an examination and study of its visible effects or phenomena.

In the mean time it may be set down as axiomatic that Nature never erects false signals or guide-posts to deceive the unwary explorer of her domains. She never erects false lights upon her shores to lure the voyager in search of truth upon the rocks and breakers of error and falsehood. Facts are divine revelations addressed to the common understanding of mankind, and reason is their divinely commissioned interpreter. Every fact has a meaning, and, properly interpreted, it constitutes an advanced step in the direction of ultimate truth.

It will now be seen that we have a means of *knowing* the essential character of that potential energy, that causative force, which produced the effect or phenomena of mind and life on this planet. Under the law which has been formulated, and which may be designated as the law of commensurable cause and effect, together with the law of heredity, we may learn the nature of the cause of mind by studying its effects or phenomena.

We know, therefore, —

1. That it is a mind energy or force; for we observe that its effects or phenomena are those of mind.

2. It is an organized, conscious intelligence; for its effects are organized, conscious intelligences.

3. It is a creative energy (omnipotence), for its resultant mind organisms possess creative powers.

4. It is a constant energy or force tending towards progressive development; for its resultant mind

energy constitutes the progressive potential of all evolutionary development.

5. It possesses an intuitive knowledge of all truth that is essential to its state of existence (omniscience); for the lowest mental organism on earth is endowed with identical powers, differing in exact proportion to its stage of development.

6. It is an altruistic intelligence (a God of love), for the instinct of altruism, beginning with the monera, dominates the world,— physical, mental, moral, and religious.

7. It is an intelligence transmissible by inheritance; for that is the only method by which mental faculties are transmitted in the organic world.

8. Finally, it is an infinite intelligence; for the mental faculties of the lowest order of animal life, by infinite extension, would be infinite in knowledge, power, and love.

These are some of the things that we may *know* of the nature and attributes of the Great First Cause; for they are the results of the inductive observation of tangible facts that cannot be accounted for on any other hypothesis. They are not conclusions resulting either from intuition, guesswork, or assumption. They are conclusions which must of necessity be valid if the facts of cause and effect are interrelated. The only way to cast a shade of doubt upon their validity would be by demonstrating that cause and effect have no necessary relation to each other.

And this, in fact, is the logical attitude of atheism regarding this question.

We might pause here and rest our case upon the overwhelming preponderance of evidence thus far

adduced in behalf of Christian theism. But I should fail to do justice to those eminent scientists who have thus far furnished the facts for my induction, did I neglect to give due attention to the strongest array of facts and arguments that they have presented in support of the general theory of organic evolution. I shall pay due regard to those facts and arguments for two good and sufficient reasons. The first is that they present conclusive evidence of the truth of the doctrine of evolution; and the second is that the same facts and arguments leave absolutely nothing to be desired in the way of proof of the truth of the theistic hypothesis.

CHAPTER VIII.

HUMAN ONTOGENY AND PHYLOGENY.

The Strongest Argument in Favor of the Evolutionary Hypothesis. — The Analogical Argument from Ontogeny to Phylogeny. — Haeckel's Great Work Demonstrative of its Validity. — But he was in Search of Atheistic Arguments. — He found None. — On the Contrary, he found Proofs of Theism. — General Remarks *in re* the Analogical Argument. — Invalid unless the Phenomena and Laws are the Same. — The Present Argument Valid. — Ontogeny a Repetition of Phylogeny. — Phylogeny the Cause of Ontogeny under the Law of Heredity. — The Primordial Germ and the Germinal Cell Identical in Character and Attributes. — The Importance of this Fact. — The Later Forms of the Human Embryo correspond with the Salient Steps in Phylogeny. — The Law of Heredity the Cause of the Correspondence. — Evidence Comparable to that of Successive Geological Strata. — Man recognizes his Earliest Earthly Ancestor by its Resemblance to the Form which marked his Earliest Embryotic Form. — Haeckel's "Fundamental Law of Organic Evolution" formulated. — The Debt that Science owes to Haeckel. — The Pains he has taken to develop Facts that disprove his Anti-Theistic Beliefs. — His Method of accounting for his Facts not so Ingenuous, or he has failed to see their Trend. — His Invitation to Philosophers. — His Promised Rewards to those who will explain Ontogeny phylogenetically. — His own Conclusions arrived at only by ignoring his Facts. — Next Chapter will explain Ontogenetic Facts phylogenetically, and carry the Analogical Argument to its Legitimate Conclusion.

IF any intelligent evolutionist, who is familiar with the leading facts and arguments in support of the theory of organic evolution, were asked what is the strongest and most convincing array of facts and arguments in favor of that doctrine, he would most likely answer that it is the analogical argument

from the ontogeny of the germinal cell to the phylogeny of the primordial germ. If he be familiar with the best literature on the subject, he will doubtless cite Professor Haeckel's great work on "The Evolution of Man" as the first, and in many respects the best, treatise in which that particular branch of the subject is exhaustively treated, and in such a manner as to make it popularly available. Its sub-title is "A Popular Exposition of the Principal Points of Human Ontogeny and Phylogeny."

I have already spoken of its high standing in the scientific world; and I have availed myself of many of the facts which he was the first to promulgate, and of which he was the first to recognize the scientific value. It is true that I have given an interpretation to the facts relating to the monera that is diametrically opposed to his, and I have invested them with a higher scientific value than he did. He was in search of the hypothetical connecting link between organic life and inorganic chemical compounds. In other words, he was in search of evidence to prove that life and mind originated from something that is the very opposite of both life and mind. He was, in fact, in pursuit of evidence to prove that there is no God.

He found no such evidence. On the contrary, he brought to light a series of facts exactly adapted to the uses of his opponents. And I undertake to say that if the combined hosts of Christian believers could unite their wisdom, they could not imagine a series of facts better adapted than his to prove the existence of the God of Christian faith, and at the same time to prove that God rules this universe by means of im-

mutable law. The world can never repay the debt of gratitude it owes to Professor Haeckel for the fearlessness and scientific integrity exhibited in promulgating a series of facts that, unless blinded by prejudice, he must have known were wellnigh demonstrative of the theory that he repudiated. He has given us the facts so minutely detailed and so amply verified that atheism can neither deny their existence nor their theistic significance.

But that is not the only service Professor Haeckel has rendered to Christian theism. He has furnished arguments as well, and his arguments are backed by an invincible phalanx of facts. I refer particularly to his analogical argument from ontogeny to phylogeny. It is true that he employs it solely for the purpose of demonstrating the truth of the evolutionary hypothesis; but, as I shall undertake to show, it is as clearly demonstrative of theism as it is of evolution. In point of fact, it leaves nothing to be desired in the way of evidence for either evolution or theism.

Before proceeding to the consideration of the argument from ontogeny, I desire to make a remark in reference to analogical arguments in general. In one of my former works¹ I ventured to animadvert upon the practice, which has obtained for many years among certain polemics of high degree, which consists in the reckless employment of the analogical argument. This form of reasoning is abused probably more than any other, partly owing to its plausible character, and partly to a lack of power to discriminate between fanciful illustration and proof, between poetic license and scientific demonstration.

¹ See "A Scientific Demonstration of the Future Life," chap. ii.

One of the most common examples of the abuse of this form of argument is shown in reasoning from the metamorphosis of the caterpillar into the butterfly up to an immortal life for man. It is invalid, for the simple reason that the laws which govern the one are not identical with those which obtain in the other. The rule is that no analogical argument is valid from a scientific, or inductive, point of view unless it can be shown that the laws governing the phenomena observed are identical with those of the subject-matter under investigation.

I recall the attention of the logical reader to this rule for the purpose of reminding him that Professor Haeckel's analogical argument from ontogeny to phylogeny possesses the highest degree of validity; for the laws are obviously the same. There is, indeed, a causal relation between them, as will be seen later on.

The general proposition is stated in the language of Professor Haeckel, as follows: —

“The history of the evolution of organisms consists of two closely connected parts: ontogeny, which is the history of the evolution of individual organisms; and phylogeny, which is the history of the evolution of organic tribes. Ontogeny is a brief and rapid recapitulation of phylogeny, dependent on the physiological functions of heredity (reproduction) and adaptation (nutrition). The individual organism reproduces in the rapid and short course of its own evolution the most important of the changes in form through which its ancestors, according to the law of heredity and adaptation, have passed in the slow and long course of their paleontological evolution.”¹

¹ *The Evolution of Man*, vol. i. pp. 1, 2.

Here, then, we have a clear and comprehensive statement of one of the greatest and most significant facts in nature. Ontogeny is the history of the development or evolution of individual organisms. Human ontogeny is the history of the development or evolution of the germinal cell of man from the moment of conception to maturity. Human phylogeny is the history of the evolution of the primordial germ from the moneron to man. Phylogeny is repeated in ontogeny. That is to say, the human embryo begins its history as a unicellular organism, microscopic in size, and possessing all the salient characteristics of the lowest unicellular organism known to science. In point of fact, there is a short period when the human embryo reverts to a formless, structureless condition. Of this our author remarks: —

“At present, therefore, the majority of observers assume that between the original nucleated egg-cell and the known nucleated parent-cell there is a stage in which there is no real cell-kernel or nucleus, and in which, therefore, the form value of the whole organic individual is no longer that of a true nucleated cell, but that of a non-nucleated cytode, i.e. a simple protoplasmic body in which no true cell-kernel (nucleus) is to be found.”¹

Of the importance of this fact Professor Haeckel has this to say: —

“We regard it as a fact of the greatest interest that the human child, like that of every other animal, is, in this first stage of its individual existence, a non-nucleated ball of protoplasm, a true cytode, a homogeneous, structureless

¹ *Op. cit.* p. 178.

body, without different constituent parts. For in this 'monerula-form' the structure of the animal, and thus of the human organism, is of the simplest conceivable nature. The simplest known organisms, and at the same time the simplest conceivable organisms, are the 'monera,' most of which are minute, microscopic, and formless bodies, consisting of a homogeneous substance, of an albuminous or mucous soft mass, and which, though they are not composed of diverse organs, are yet endowed with all the vital qualities of an organism. They move, feed, and reproduce themselves by division. These monera are of great importance, owing to the fact that they afford the surest starting-point for the theory of the origin of life on our earth. We shall presently have further occasion to point out their significance. Here we need only give due weight to the very remarkable fact that, both in germ history and tribal history, the animal organism begins its evolution as a structureless mucous ball. The human organism, like that of the higher animals, exists for a short time in this simplest conceivable form, and its individual evolution commences from this simplest form. The entire human child, with all its great future possibilities, is in this stage only a small, simple ball of primitive slime (protoplasm)."¹

I have been thus particular in quoting somewhat at length what Professor Haeckel has to say in reference to the beginning of the ontogenetic history of the embryo of man for the reason that I regard it as possessing greater evidential value than any other stage of development. The particular reasons will more fully appear hereinafter.

The later forms of the embryo corresponding to those of the phylogenetic series cannot be described

¹ Op. cit. p. 178 *et seq.*

in detail in a work like this, and the curious reader must be referred to the work from which I have quoted. It must be said, however, that the series of gradients is necessarily far from complete. The history of untold ages of years cannot be repeated in all its details within the space of three quarters of a year. Nevertheless, the evidential value of what we have is not in the least impaired; for the salient features are reproduced with such circumstantiality of detail as to leave no room for rational doubt of the fact that human phylogeny is repeated in human ontogeny. Moreover, this being true, it follows that a causal relation exists between the two. That is to say, phylogeny is the cause of ontogeny; and this in turn is demonstrative of the never-failing potency and the far-reaching significance of the law of heredity.

We have already seen that, at the beginning of the embryotic life of man, the beginning of organic life on the earth is faithfully and minutely repeated; and we know that the culmination of both histories is identical. That is to say, human phylogeny began with the moneron and culminated in man; and human ontogeny begins with the monerula and culminates in a completely formed human being. This of itself constitutes presumptive evidence of the truth of the hypothesis. If, therefore, such of the intermediate steps in the ontogenetic series as are shown to exist are even approximately the same as those in the phylogenetic series, the evidence is conclusive. More especially is this true if the intermediate steps do not transcend their regular order as they occur in the phylogenetic series. In other

words, the value of the evidence is greatly enhanced by, if indeed it does not depend upon, the fact that the forms as they are developed in the ontogenetic series are never reversed in the order of their development in the phylogenetic series.

Thus, the human embryo at a certain period has essentially the anatomical structure of the lancelet, later of a fish, and in subsequent stages those of amphibian and mammal forms. Moreover, in the further evolution of these mammal forms those first appear which stand lowest in the series, namely, forms allied to the beaked animals (*Ornithorhynchus*); then those allied to pouched animals (*Marsupialia*), which are followed by forms most resembling apes; till at last the peculiar human form is produced as the final result.¹ The point is that the order of development of these forms in the ontogenetic series is never reversed; and that, as far as they go, they correspond to the orderly sequence of their development in the phylogenetic series. This of itself is demonstrative of the causal relation between the two series and the dominating influence of the law of heredity in the process of organic evolution.

It will thus be seen that the evidence in this case is analogous in character to that by which we determine the orderly sequence of geological strata. No one place has yet been discovered on our earth where all the geological strata are present in the order in which they were deposited. Nevertheless we know the order in which they were formed by comparison of the formations shown in different localities; and we know the order was never re-

¹ See "The Evolution of Man," vol. i. p. 3.

versed, for the reason that we never find an older stratum above a later one. Thus, we never find the Cambrian overlying the Silurian, or the Devonian underlying either the Cambrian or the Silurian. The latter may be absent in a given locality, but it will never be found anywhere either above the Devonian or below the Cambrian. Hence the geologist knows beyond the shadow of a doubt the orderly sequence of geological formations; and with these data he can "reconstruct the past and predict the future."

In like manner the scientific evolutionist knows his ground. He knows, from a comparative analysis of phylogenetic and ontogenetic forms, that a causal relation must exist between the two; and that conviction becomes a certainty when he knows that the order in which those forms are developed in the two series is exactly the same. And he, too, is thus enabled to reconstruct the past and predict the future; for he recognizes in this law the "one touch of nature" that literally "makes the whole world kin." He finds the key to his own pedigree in his own ontogeny; and he finds its details recorded, with unerring certainty and exactitude, in his own phylogeny. Step by step he traces his ancestry back through myriads of forms and æons of time to the very beginning of organic life; and he recognizes his earliest earthly ancestor by its identity in form and substance with that which marked the first stage in his own embryotic life and development.

From this induction, backed by innumerable facts, each pointing toward the one conclusion, he infers a law, — "*the fundamental law of organic evolution,*"

as Haeckel emphatically puts it; "or more briefly, *the first principle of biogeny.*"¹

The following is Professor Haeckel's formal statement of the law: —

"This fundamental law, . . . on the recognition of which depends the thorough understanding of the history of evolution, is briefly expressed in the proposition that the history of the germ is an epitome of the history of the descent; or, in other words, that ontogeny is a recapitulation of phylogeny; or, somewhat more explicitly, that the series of forms through which the individual organism passes during its progress from the egg cell to its fully developed state is a brief, compressed reproduction of the long series of forms through which the animal ancestors of that organism (or the ancestral forms of its species) have passed from the earliest periods of so-called organic creation down to the present time.

"The causal nature of the relation which connects the history of the germ (embryology or ontogeny) with that of the tribe (phylogeny) is dependent on the phenomena of heredity and adaptation. When these are properly understood, and their fundamental importance in determining the forms of organisms recognized, we may go a step further, and say: phylogenesis is the mechanical cause of ontogenesis. The evolution of the tribe, which is dependent on the laws of heredity and adaptation, effects all the events which take place in the course of the evolution of the germ or embryo."²

I have thus briefly set forth, mostly in the language of its ablest exponent, the most important fact in the history of organic evolution, as well as the strongest

¹ "Biogeny" is the history of organic evolution in its widest sense.

² Op. cit. vol. i. pp. 6, 7.

argument in support of the evolutionary hypothesis. It is but simple justice to Professor Haeckel to say that his facts are beyond dispute. Their development is the result of years of herculean labor and conscientious research; and his love of truth for its own sake is demonstrated by the infinite pains he has taken to develop facts, even though they disprove his anti-theistic beliefs. His conclusions, so long as he keeps within the domain of organic evolution, are also eminently just and legitimate. That is to say, from the moneron to man, inclusive of both, no true scientist will gainsay either his facts or his conclusions. It is only when he attempts to go back of the moneron in search of efficient causes that he fails to see the true significance of the facts that he has brought to light. It is there that his ingenuousness ceases to be conspicuous, excepting in his confession that he has adopted a conclusion which is unsustained by any fact or phenomenon of nature. This, however, I have already pointed out. I now propose to inquire what further conclusions are legitimately derivable from the great law of interrelated and interdependent phylogeny and ontogeny. I am encouraged to do so because of the learned author's invitation to the philosophical world, to say nothing of the promised results. In the closing chapter of his great work he makes this encouraging observation: —

“The speculative philosopher who will take possession of the facts of ontogeny and explain them phylogenetically (according to that law), will introduce a greater advance in the history of philosophy than has been made by the greatest thinkers of all previous centuries.”¹

¹ *Op. cit.* vol. ii. p. 454.

It must be admitted by the most apathetic that the prize is a glittering one and well worth striving for; but, unfortunately, I am barred out of the race by the professor's terms. In the first place, he qualifies the conditions by declaring, later on, that "it cannot be doubted that these facts, if properly weighed and judged without prejudice," will lead to the professor's own atheistic conclusions. Besides, I am not a "speculative philosopher;" and the promised reward is limited to that class of thinkers. Moreover, the professor has exhibited to us, in his own proper person, a specimen of the kind of speculative philosopher that is required for his purposes. Judging from the sample, and the task to be performed, it requires a philosopher who will adopt Professor Haeckel's facts as his premises and ignore them in his conclusions. In other words, there is no way of arriving at the professor's conclusions in relation to the origin of life on this planet except by completely ignoring his facts. This I cannot consent to do, even for the brilliant rewards naturally flowing from the introduction of a new element of confusion and uncertainty into the speculative philosophy "of all previous centuries." I shall, nevertheless, "take possession of the facts of ontogeny and explain them phylogenetically," as I understand them, with special reference to their bearing upon the question of the origin of life.

CHAPTER IX.

THE THEISTIC ARGUMENT FROM ONTOGENY AND PHYLOGENY.

Professor Haeckel's Premises accepted for more than his Estimated Valuation. — No Dispute as to Facts. — The Matter in Dispute relates to Deductions from Laws agreed upon. — The Invisible World not outside the Domain of Law. — All Natural Forces Invisible. — Deductions from Known Laws always Legitimate. — Facts agreed upon by Atheists and Theists: 1. Ontogeny repeats Phylogeny. — 2. Phylogeny causes Ontogeny. — 3. Heredity the Controlling Law. — 4. Heredity controls Ontogeny and Phylogeny. — 5. Potentialities of Manhood reside in the Germinal Cell of Man. — 6. Also in the Primordial Germ. — It follows that (1) the Laws are the same; (2) that Pre-existent Conditions were the same; (3) that Causes were Identical in Kind. — The Ontogenetic and Phylogenetic Series begin alike with the Moneron and end in Man. — Each has Identical Powers and Mental Attributes. — Conditions and Causes being the same, if we find the Cause for one Condition we can safely infer the other. — We know why Potentials of Manhood reside in the Germinal Cell of Man. — Because they were inherited from an Antecedent Mind, — that of the Parent. — Corollary: The Potentialities of Manhood reside in the Moneron because they were inherited from an Antecedent Mind, — that of the Infinite Parent. — No other Conclusion logically Legitimate. — A Denial is a Repudiation of all Known Laws relating to it, especially that of Heredity. — If Nature is constant, the Moneron inherited its Divine Potentialities from the Divine Mind. — This is the Analogical Argument carried to its Legitimate Conclusion. — The Analogy is Incomplete without it, and therefore Invalid. — What does Atheism offer in Refutation? — Spontaneous Generation. — A Theory without a Fact to support it. — An Abandonment of Induction. — A Guess and a Hope that Somebody may sometime discover (or manufacture) a Fact to sustain the Atheist's Guesses. — Darwin's Guess and Huxley's Hope. — Haeckel's Guess without Hope. — Ward's Guess and Hope. —

Specimens of Atheistic "Induction."—Nevertheless the World owes them much; notwithstanding a Relapse toward Fetichism, they builded better than they knew.—Their Facts prove the Theory of Evolution, but they also prove the Existence of the God of Christian Faith.

WE have now before us all the salient facts and phenomena of organic evolution that are necessary to enable us to reach a definite conclusion in regard to the question of the origin of life on this planet. The fundamental law of organic evolution has been stated in the language of its ablest exponent, and accepted as correct in every sense of the word. There is, therefore, no disagreement either as to the facts from which the law has been induced, or as to the correctness of the induction.

It must be remembered, however, that the facts and the law, as thus agreed upon by and between the contending parties, all pertain to the subject of organic evolution as they are manifested in phenomena in the visible organic world, beginning with the monera and culminating in man. The matter in dispute lies outside the realm of what is cognizable by the senses. But it is not outside the dominion of law. It is not outside the domain of the law which has been found to exist, and which has been formulated in the preceding pages of this book. It is purely a matter of deduction from that known fundamental law of organic evolution, that first principle of biogeny, to which all questions pertaining to the subject-matter must be referred. The fact that a force is invisible does not remove it from the domain of law. All the forces of nature are invisible; and yet we harness them to our uses and formulate their laws. The mind energy that animates the monera is

invisible; but it is the creature of law. And so is the source from which the moneron derived its life and mind, whether it resided in the rocks and mud of the inorganic earth or emanated from an infinite antecedent mind. The fact that a causal relation existed between the two brings them under the law of "commensuration,"¹ and hence under the fundamental law of organic evolution. That is to say, since the causal forces of nature are always necessarily commensurable with their terrestrial modes or forms of manifestation, it follows that they are governed by the same laws. We may, therefore, deduce from the known law all legitimate conclusions relating to antecedent causes or consequent effects, with the same confidence that we should feel if all the forces of nature were visible.

Before proceeding to draw our conclusions it will be in order to enumerate the points of agreement between atheistic and theistic evolutionists. In that way the issue between them will be developed and clearly defined, and no time will be wasted in the discussion of irrelevant questions.

The essential points are the following

Inductions.

1. That the history of the development of the human germinal cell, from the monerula to the fully developed human entity, is a recapitulation of the history of the development of the primordial germ, from the moneron to man; or, in other words, that ontogeny is a repetition of phylogeny.

2. That phylogeny is the cause of ontogeny.

¹ See chapter vii.

3. That the law of heredity is the agency through which phylogeny controls ontogeny.

4. That the law of heredity is universal in its application to the subject-matter, beginning with the moneron and culminating in man, on the one hand, and, on the other, beginning with the germinal cell and culminating in a fully developed human entity.

Deductions.

1. That the potentialities of manhood reside in the germinal cell of man.

2. That the potentialities of manhood reside in the primordial germ.

This, perhaps, is as far as it is prudent to go in assuming the points of agreement between atheism and theism. I have ventured thus far only because the foregoing propositions are all essential to the doctrine of organic evolution, and they have all been insisted upon as fundamental by the atheistic evolutionists. The next step would be some such proposition as that what is true of ontogeny is also true of phylogeny, or that nature is constant, or that nature's laws admit of no exceptions; each of which propositions atheism tacitly denies when it seeks to account for the origin of life on the theory of spontaneous generation. We must, therefore, now proceed independently to draw conclusions from the premises that have been agreed upon.

The first proposition is that, if it is true that ontogeny, by virtue of the law of heredity, is a repetition of phylogeny, it follows that the laws of the two are identical.

No one can deny this proposition without impeaching the law of heredity itself; for it is but a restatement of the very essence of that law. Its truth is, in fact, self-evident.

Secondly, since the law of ontogeny is identical with the law of phylogeny, and since identical results have ensued, it follows that the pre-existent conditions were identical.

The truth of this proposition also is self-evident.

Thirdly, since the law, the results, and the conditions were each identical, it follows that the causes of those conditions were also identical in character and kind.

No person can deny this proposition without impeaching the constancy of nature. The universal experience of mankind may be invoked to verify it. "Like causes produce like effects." "Identical conditions are brought about by causes identical in kind." These are axioms, and they apply with unvarying exactitude in all the broad realm of natural causes and effects. They are, in fact, but varying forms of expressing that universal postulate, — the constancy of nature.

Now, let us see how these propositions apply to the subject-matter under consideration.

In making this examination we will again return to the beginning of organic life, for the reason that, as has often been repeated, the nearer we approach to its source the more clearly will the observable facts and phenomena reveal the essential character of that source. If facts are to be found in the phylogenetic series that point to spontaneous generation as the source and origin of mind and life, we

must expect to find them there; "for," in the language of Haeckel, "the monera actually stand on the very boundary between organic and inorganic natural bodies." On the other hand, if facts are to be found in either ontogeny or phylogeny that point to a divine origin of mind and life, we must still expect to find it at the beginning of organic life, for the monera also stand on the very boundary between the realms of mind and matter. Literally, the monera stand nearer to God than any other sentient creatures.

Now, we have already learned from Professor Haeckel that this, the beginning of organic life in the phylogenetic series, is exactly repeated in the beginning of human ontogeny. We have also learned that the salient features of phylogeny are repeated in orderly sequence in ontogeny. And, finally, that the culmination in each of the two series is identical with that in the other. In short, they both begin with the moneron and culminate in a human being. We also learn, from the same high authority, that the law of heredity constitutes the connecting link between the two series, and hence phylogeny is the cause of ontogeny. Being thus inseparably interrelated by causal connections, it follows that both series are controlled by the same law. This, then, disposes of my first proposition.

The second proposition is that since the law and the results are the same, it follows that the pre-existing *conditions* were identical.

The conditions referred to are those existing at the beginning alike of phylogeny and ontogeny. Those essential to the present inquiry are the following:

1. An unorganized, undifferentiated, homogeneous mass of protoplasm.

2. An unorganized, undifferentiated, homogeneous mass of protoplasm endowed with a mind.

3. An unorganized, undifferentiated, homogeneous mass of protoplasm endowed with a mind in which inhere the potentialities of manhood.

These are the conditions that are common to the beginnings of the two series of events. They are the basic conditions upon which depend all the other steps in the two series. The physical conditions are the same in both; and necessarily the mental conditions are identical, or the final results could not be the same. We know, therefore, that the conditions are the same, for we know that the final result—a human being—is identical.

Thus far no scientific evolutionist, atheistic or theistic, will gainsay either my propositions or my conclusions; for they are all elementary deductions from the fundamental principle of organic evolution, as laid down by its ablest exponent.

The third proposition is that, the conditions being the same, it follows that the causes of those conditions were identical in character and kind. This proposition, as before remarked, no person can deny without impeaching the constancy of nature.

The conditions for which we are in search of a cause are stated above. The salient feature, which includes the others, is the fact that the mind with which the moneron and the monerula are each endowed contains the potentialities of manhood. The question is, What is the cause of this condition? Science tells us that it exists alike in both, and that

it produces identical results in phylogeny and ontogeny, namely, manhood. How does it happen that these globules of protoplasm are thus endowed with such wonderful potentialities? Science tells us that they are exactly alike in every particular. The chemical constituents of their bodies are the same; they are equally deficient in structural organism; their minds have the same powers, attributes, and potentialities; and the grand results of the exercise of those powers and the development of those potentialities are identical, for they culminate in the same human entity. It is, in fact, impossible to imagine conditions more nearly alike or more certainly the result of causes identical in character and kind.

It follows that if we can ascertain the cause in one case we shall know with equal certainty *the exact nature* of the cause in the other. There will be no guesswork about it, no soaring into the regions of speculative philosophy in search of some fanciful theory of causation without facts to sustain it.

Fortunately it so happens that we know why it is that the germinal cell of man, the monerula, the initial organism in human ontogeny, is endowed with the potentialities of manhood.

We know that it is because the parent from which it emanated was endowed with the attributes and qualities of manhood.

In other words, we know that *it emanated from an antecedent mind which was endowed with the identical attributes and powers that were developed from the initial organism.*

In short, we know that its powers and potentialities were due to the law of heredity.

Now, let us carry the analogy back to the initial mind-organism in the phylogenetic series. I submit that there is but one legitimate, logical conclusion, and that is that—

The mind of the moneron derived its attributes, powers, and potentialities, under the law of heredity, from an antecedent mind which was endowed with the identical attributes and powers, differing only in degree, that were developed from the moneron.

To put the crucial point of the argument in a nutshell, we may say,—

Why is it that the potentialities of manhood inhere in the germinal cell of man? Simply because it inherited them from a mind endowed with the actual faculties of manhood, namely, the mind of the finite parent.

Again, why is it that the potentialities of manhood inhere in the primordial germ? Simply because it inherited them from a mind possessing the actual faculties of manhood, namely, the mind of the Infinite Parent.

I submit that, in the language of Haeckel, this is "taking possession of the facts of ontogeny and explaining them phylogenetically according to that law."

I submit, further, that there is no other logical, scientific, or reasonable phylogenetic interpretation of the facts of ontogeny.

Any other possible interpretation of those facts involves the utter repudiation of the law of heredity at the very point where that law is most in evidence, namely, at the beginning of organic life on this planet. It is most in evidence at that point in organic history,

for upon every germinal cell, at the beginning of its ontogenetic history, is stamped the indubitable evidence of its descent from the moneron. All through the æons of time that have elapsed since the beginning of phylogenetic history the law of heredity has asserted its supremacy, its constancy, and its universality; and millions of facts occur every day, each one of which bears testimony to this universal truth. If Nature, as science instructs us, is the great teacher of order and uniformity; if she exhibits no false proportions and sounds no discords; if she sets up no false signals to deceive the unwary; if cause and effect bear any relation to each other, — if, in short, Nature is constant, we must suppose that the law of heredity did not originate in the moneron. We must suppose that it, too, was a creature of that law; and that its wonderful faculties and divine potentialities were inherited from a divine mind.

This, then, is the analogical argument from ontogeny to phylogeny carried to its legitimate conclusion. If the analogy is perfect from man back to the moneron, as atheists very properly insist; if the law governing the two series of events is identical, as atheistic science has very clearly demonstrated, — I submit that the analogy is not complete, and is therefore invalid, until it is carried back to the origin and cause of the life and mind of the moneron as well as that of the monerula. As I stated in the beginning, the analogical argument in this case is legitimate, valid, and conclusive, because the phenomena are the same and the law is identical. I still adhere to that conclusion and insist upon it. But I also insist that its evidential value depends upon its

completeness, and that it is clearly not complete until it is carried as far in phylogeny as it is in ontogeny.

What, then, has atheism to offer in refutation of this induction? Nothing, absolutely nothing, but the theory of spontaneous generation. As I have repeatedly dwelt upon the entire absence of facts to sustain that theory, I will content myself with a general summary of the salient features of the atheistic attitude on this and the subsidiary question as to the origin of species. I have shown that Darwin's theory that natural selection "originated" species was merely an attempt, in behalf of atheism, to sustain the theory that physical organism antedated mind, and was, in fact, the cause of mind. I have also shown, by Haeckel's demonstrations and Huxley's logic, that exactly the opposite is true, — that in all the broad realm of sentient life, mind not only antedates physical organism, but is the cause of all structural changes in organism.

This, however, I have no intention to dwell upon here. I mention it merely for the purpose of inviting renewed attention to the fact that Huxley admits that Darwin did not present one fact to prove that natural selection ever originated a species. On the contrary, the vast array of facts which Mr. Darwin so ably marshalled to prove his general theory of evolution are all against the theory that natural selection originated species. It preserved species (the fittest), but it did not originate them.

Nevertheless, while his friend, Professor Huxley, felt compelled to tell the truth about his failure to substantiate his hypothesis, he (Huxley) was fain to express the hope that somebody, on some future

occasion, would show that a new species could be originated by artificial selection, and thus give his friend Darwin's theory one fact to rest upon.¹

Again, Professor Haeckel's theory of spontaneous generation rests upon the same hopeful foundation. He admits that there are no facts to prove his theory — that all experimental facts are against it — and he is not quite sure that it can ever be experimentally proven, "unless great difficulties are overcome." But he very ably overcomes the difficulty thus encountered by questioning the sanity of those who do not accept his theory.² It is presumable, however, that he entertains the hope that somebody, some day, may be able to wrest a sign of life from inorganic matter. But he does not venture to express that hope in words.

Last, but by no means least, we have our own great American scientist, Professor Lester F. Ward, who is also filled with hope for the future of the science of mind. His hope is in chemistry; and he believes that somebody will some day be able to produce the phenomena of life and mind by the process of "recompounding," or "aggregation," of albuminous compounds.³ To be sure, it has never yet been done, and there are, of course, no facts to show that it ever can be done; but hope springs eternal in the atheistic breast just the same.

These are but specimens of the boasted "inductive methods" of the leading atheistic scientists of England, America, and Germany, when dealing with the

¹ *Darwiniana*, p. 75.

² *The Evolution of Man*, vol. ii. p. 32.

³ *Status of the Mind Problem: a Lecture delivered in the National Museum, Washington, 1894.*

problems of the human mind and soul; more especially when the question of the origin of mind and life is involved in their researches.

If science stands for anything, it stands for truth. If the names I have mentioned suggest anything to those who know of their work, it is science and the inductive methods of research. They have written their names upon the scroll of fame in imperishable characters; and it was because of their unswerving devotion to truth as it is found revealed in the facts of nature. They set out in search of the origin of life, and when they found man's earliest earthly ancestor, they imagined that they had reached the final goal of their ambition. But it was there that they forever abandoned those methods of inductive research that had carried them so successfully through the mazes of evolutionary history. Was it because there were no facts upon which to base an inductive hypothesis of the origin of that life and mind which they found so conspicuously in evidence in man's earliest earthly ancestor? Clearly not. And yet nothing in the history of scientific research is more clearly evident than that they utterly abandoned and repudiated the inductive method at that crucial point in the history of their search for the origin of life. And what did they substitute as a compensation to science for the repudiation of the only method of research by which man can be sure that he knows anything? They substituted a purely speculative hypothesis, the mere statement of which constitutes a *reductio ad absurdum*,—a theory that suggests nothing but a recrudescence of fetichism divested of its redeeming features.

Why it is that atheistic scientists have chosen to ignore all that vast array of facts that point so unerringly to a divine origin of life and mind, I leave others to judge. There are but two hypotheses to choose from. One is that it was because they had the logical capacity to see that the facts all conspired to prove the divine origin of mind; and the other is that they had not that capacity.

However, the world owes them a debt of gratitude for demonstrating the evolutionary hypothesis by means of facts that also prove the divine origin of life and mind.

If those facts establish the truth of the evolutionary hypothesis, they are equally demonstrative of the theistic hypothesis. And there is no possible way of evading or denying the latter, except by repudiating the law of heredity, the law of cause and effect, the validity of the inductive method of research,—in short, there is no possible way of evading the theistic interpretation of those facts except by the repudiation of every rule or axiom of scientific, logical, or rational investigation by which the validity of conclusions can be established.

I have now briefly outlined the salient facts of organic evolution which bear upon the question of the divine origin of life and mind on this planet. The intelligent reader will not fail to note that in the presentation of the crucial facts and arguments I have not travelled outside of the data furnished by the leading evolutionary scientists. That is to say, I have not, in the later chapters, intruded the new psychology into the argument, nor drawn upon it for data, even for the purpose of fortifying the

theistic interpretation of the facts of organic evolution. I have pursued this course, as indicated in the introductory chapter of Part II. for the purpose of exhibiting the strength of the theistic argument when based alone upon the facts admitted by atheistic evolutionists; thus avoiding possible prejudices against the new psychology.

Nor will the intelligent Christian reader fail to note that the most important conclusion derivable from what has been said is yet to be stated. And that is that, if our conclusions are valid regarding the divine origin of life, it follows that the truth of the Christian theory of the essential divinity of man is proved beyond a doubt.

It now remains to show what light is thrown by the new psychology upon man's divine pedigree.

CHAPTER X.

IN THE IMAGE OF GOD.

The True Basis of Reconciliation of Religion and Science. — Consists in a Truthful Interpretation of the Facts of Nature. — There are not Two Orders of Truth, one Scientific and the other Religious. — The Old Prophet's Declaration. — Man was made in the Image of God. — The Common Anthropomorphic Interpretation. — Due to a Defective Psychology. — God was conceived as an Infinite Reasoner. — Otherwise an Infinite Inquirer after Facts and a Guesser at Conclusions. — The Divine Likeness in the Faculties of the Subjective Mind. — Even its Limitations Suggestive of Divine Attributes. — The Significance of its Limitations. — Its Faculties tabulated. — Intuition an essentially Divine Attribute. — Its Importance in the Organic World. — Deductive Reasoning the Concomitant of Intuition. — They, with Memory, constitute the Intellectual Faculties of the Subjective Mind. — Extended by Infinity, they would be Omniscience. — Inconceivable Rapidity of Subjective Mentation. — Prodigious Feats of Memory. — Illustrative Cases. — Dynamic Energy of the Subjective Mind. — Telekinesis. — Extended to Infinity, it would be Omnipotence. — New Testament Examples of Dynamic Force of the Soul. — Telepathy. — Its Significance. — Distance no Obstacle — Infinite Extension would constitute Omnipresence. — A Channel of Communication between God and Man. — Prayer and Inspiration. — The Natural Emotions. — Their Altruistic Character. — Infinite Extension would mean Infinite and Universal Love. — Thus the Faculties of the Soul, infinitely extended, give us an Omniscient, Omnipotent, Omnipresent God of Infinite and Universal Love. — The Highest Possible Conception of Deity. — The Conception not Anthropomorphic. — It neither limits nor measures God. — His Qualities alone revealed. — But it shows that Man was made in the Image of God. — This much Man may know of God. — Not that it reveals Human Attributes in God, but Divine Attributes in Man. — Man's Place in Nature. — His Obligations and Duties.

I HAVE now outlined the leading facts of organic evolution which, conspire to prove beyond a

doubt the existence of an infinite intelligence — a divine mind — which is the origin and the great first cause of life and mind on this planet. By the aid of those great scientists to whom the world is indebted for the facts and arguments which demonstrate the essential truth of the theory of organic evolution, I have been able to trace the descent of man back to a divine ancestry. I might pause here; for it is sufficiently evident, from what has already been said, not only that a divine intelligence exists, but that an intimate personal relationship exists between that divine intelligence and mankind. It is, in fact, sufficiently evident that God is our Father, and that it was therefore a calm statement of a literal truth, and not an Oriental extravagance or a figure of speech, that Jesus employed when he proclaimed the fatherhood of God and the brotherhood of man. The inerrant intuitions of the Man of Nazareth are thus made manifest by the inductions of modern science; and thus the great fundamental principle of the Christian religion is shown to rest upon a firm scientific foundation as well as upon the authority of a divine intuition or revelation. It is shown that there are not two antagonistic orders of truth in the universe, — one scientific and the other religious; but that, on the contrary, religious truth will not and cannot be antagonized by true science. It is only by a false and vicious interpretation of the facts of nature that religious truth is antagonized. True science is, therefore, the handmaid of true religion; and the reconciliation of religion and science only awaits a true interpretation of the phenomena of nature.

There is, however, another sublime intuition that remains to be considered. It was by an older prophet than Jesus; but it is of equal interest and importance with that which we have been considering. It is, indeed, a corollary of the fact of divine Fatherhood, and, under the law of heredity, it must be equally true and verifiable. I refer to the declaration of the prophet of old that "man was made in the image of God."

I am quite well aware of the anthropomorphic interpretation of that declaration that has been given to it by the enemies of the Christian religion. I am also aware that atheism has been wont to contribute to the gayety of its cult by picturing to the imagination a man of colossal proportions—a physical and intellectual monster—as the true interpretation of the prophet's conception of God. Of course, as all but atheists are aware, the words were spoken, not of physical man, but of mental attributes. But even this higher conception did not entirely remove it from the charge of gross anthropomorphism so long as the crude ideas of the old psychology were imported into it and made a part of the conception. The old psychology bore it in upon us, with perpetual insistence, that the highest intellectual power with which man is invested is that of inductive reasoning. The conception of God was, therefore, necessarily limited by the prevailing ideas of the powers of man. The highest possible conception of God, therefore, under the old psychological ideas, was that of a being endowed with infinite reasoning powers. Inductive reasoning, as I have often remarked, is merely a method of in-

quiry; and a very slow and laborious method it is. It is a systematic effort to find out something of which we are ignorant. Extending that faculty to infinity does not change its character nor divest it of its limitations. A God of infinite reason, therefore, would still be a searcher after facts and a guesser at conclusions. It is obvious that a conception of Deity based upon man's inductive powers is of a being of limited intelligence, and hence open to the charge of anthropomorphism.

I repeat, therefore, what I have so strongly insisted upon in the earlier chapters of this book, that the brain is a physical organ — a product of organic evolution — especially adapted to a physical environment and to no other; and that its powers of induction are no more a part of man's divine heritage than are his powers of deglutition. The divine part of man is his subjective mind — the mind of his immortal soul — which exists independently of the body or any of its physical organs; which is literally a spark of the divine intelligence, — literally a part of the mind of God.

It is to this part of man that I now wish to invite the attention of my readers, asking them to bear in mind the declaration of the prophet that man was made in the image of God; and of Jesus, that we are the sons of God. I do so for a twofold purpose, namely, —

First, to emphasize what has already been proven by the facts of organic evolution relating to the divine origin of life; and

Secondly, to draw the legitimate deductions as to the character, attributes, and powers of God.

That is to say, having abundantly proved from the facts of organic evolution that man is the offspring of God, it is now logically legitimate to analyze the faculties of the offspring for the purpose of ascertaining something of the attributes and powers of the ancestor. Under the law of heredity this is not only a legitimate logical process, but it is one that insures approximately correct results. Not that it is given to finite minds to comprehend the Infinite Intelligence or to fathom its mysteries; but that he is not "utterly unknowable" by his children.

Before proceeding to an analysis of the faculties of the subjective mind, I wish to say a word in regard to its so-called limitations resulting from the law of suggestion. I have heretofore pointed out the fact that the law of suggestion is a necessary limitation of the independence of the soul during its sojourn in a physical environment, for the reason that, during the transitional period from savagery to civilization, the emotions require the regulating influence of reason. That influence, of course, could only be acquired and maintained by the reasoning mind by virtue of such a limitation of power as the law of suggestion imposes upon the subjective mind. This limitation continues, as I have shown, until conscience becomes an instinctive emotion of the soul; after which the subjective mind assumes a normal ascendancy. I have drawn the conclusion, from all the facts in the case, that the subjective mind was created with a special adaptation to a higher life — an environment of truth — where no false suggestions can reach it. I have also shown that the so-called law of suggestion is but another way of stat-

ing the fact that the subjective mind is not endowed with the power or faculty of inductive reasoning, and that that apparent limitation is due to the fact that, in the higher life to which it is destined, the faculty of intuition is the dominant intellectual faculty. The latter faculty enables its possessor to acquire a knowledge of the laws of its being and its environmental conditions by immediate, intuitive perception; and this, of course, would render the inductive faculty useless and superfluous,—in fact, impossible.

I repeat these observations here merely for the purpose of inviting renewed attention to the fact that an omniscient intelligence is necessarily independent of the use of inductive reasoning, the latter being merely a method of inquiry by a limited, finite intelligence.

It will thus be seen that the very limitations of the powers of the subjective mind proclaim its divine origin and give promise of its ultimate destiny. They constitute, in fact, indubitable evidence that, in the highest sense of the expression, "man was made in the image of God."

Now, let us examine systematically the faculties of the subjective mind of man, with a view to finding what further evidence they afford of his divine origin and likeness, but more especially with a view to finding what conceptions of the attributes and powers of God may arise from a knowledge of those of his children.

To facilitate such an examination, I append below a table exhibiting in systematic order all of the purely subjective faculties. The right-hand column shows the faculties as they actually exist in man.

The left-hand column shows what they would be by infinite extension without a change in their essential characteristics. In other words, the right-hand column exhibits man's subjective faculties as they exist; and the left-hand column shows the conception of Deity which is necessarily derivable from a knowledge of their existence and their divine origin:—

<i>God.</i>	<i>Man.</i>
Omniscience	Instinct or Intuition. Deductive Powers (potentially Perfect). Memory (potentially Perfect).
Omnipotence	Telekinetic Energy.
Omnipresence	Telepathy.
Infinite Love	Natural Emotions.

A few words will further explain and justify this table and its implications.

At the head of the list, as befits its godlike potency, is intuition, the potentialities of which can be adequately described only by the employment of terms that express the highest attribute of omniscience, — the power of apprehending essential truth antecedent to and independent of reason, experience, or instruction. It was by the exercise of this faculty that the prophet of old was enabled to grasp that most fundamental of all psychological truths, — that

"man was made in the image of God." Men have called it "inspiration;" and certain it is that it is the basis of all that we know of inspiration. It is the instantaneous perception of fundamental and necessary truth. Its first manifestation on earth was in the moneron, and science named it "instinct." In all the lower animals it is thus designated. In man it is named "intuition." By infinite extension it becomes omniscience. It is the one faculty possessed by the human soul that proclaims the divine pedigree of man in terms that cannot be misunderstood. Without it animal life would have perished on the threshold of the organic world. Abolish it from the universe, and the animal world would perish in a generation, and God would cease to be omniscient. It is the intelligence behind creative energy, and it is the preserver of sentient life everywhere.

The next faculty on the list is that of deductive reasoning. It is the inseparable concomitant of intuition. The latter grasps the law by instantaneous perception, and the former, with the same inconceivable rapidity of mentation, deduces all legitimate conclusions and consequences, near and remote. Indeed, the processes of mentation in the subjective mind are so inconceivably rapid that it is impossible, in cases of genuine intuition, to know where the work of intuition ends and the process of deduction begins.

Again, we are reminded of the attributes of omniscience, and we are enabled to form a finite conception of the means by which God knows the past, present, and future. He knows the past by means of

a memory that is absolute; the present by immediate cognition; and the future by means of an infinite knowledge of laws and causes, proximate and ultimate, and infinite powers of inerrant deduction.

The next on the list is the potentially perfect memory of the subjective mind. Little need be said on this subject beyond the fact that it is an inherent faculty in the subjective mind of man, and that it is necessarily an attribute of omniscience.

Here, then, we have the three intellectual faculties of the subjective mind of man, namely, intuition, deduction, and memory, all potentially perfect. That is to say, these faculties exist in the subjective mind of man, and are often phenomenally manifested in such a way as to reveal their wonderful potentialities, as in men of genius, in mathematical and musical prodigies, and in feats of memory far beyond the capability of the objective mind. Thus, the intuitive perception of the laws of quantity or of numbers is shown in such prodigies as Zerah Colburn, Jedediah Buxtone, and others; and deduction enables them to give, instantaneously, the exact answer in figures to the most intricate mathematical problems. Perfect memory is revealed in such prodigious feats as that related by Coleridge of the ignorant servant-girl who repeated whole pages of Latin and Greek many years after having heard her master read those passages aloud in a room adjoining the one in which she was engaged in household work. She could not even read her own language, and her objective mind took no note of what she heard; and yet every word was indelibly impressed upon the mind of the soul, only to reappear, years after, when the functions of

the brain were inhibited by disease and imminent dissolution.¹

Thus is revealed, often under pathological conditions, it is true, the latent intellectual capacities of the subjective mind, — the mind energy of the human soul. It goes without saying that what is thus revealed in one mind must exist potentially in all other human minds, and that they only await proper conditions for their manifestation. The essential condition being the inhibition of the functions of the objective mind, it follows that the most perfect conditions under which those powers can reach their full fruition must be the complete removal of the clogs of our earthly investiture.

This, however, is a digression. Returning to the subject under immediate consideration, it must be evident that the subjective mind of man is endowed with a complete intellectual equipment with divine potentialities; and that the faculties thus shown to exist in each one of us are embryotic omniscience. That is to say, the same faculties, simply by infinite enlargement and extension of their capacity, without changing their essential nature, would become omniscience.

The next faculty or power of the human soul to be considered is what I have designated as telekinetic energy. It is simply the power to move ponderable bodies without physical contact or mechanical appliances. I am aware that I shall run counter to the prejudices of some, and transcend the sphere of observation of many, when I say that this

¹ For further particulars of these cases, see "The Law of Psychic Phenomena" and authorities therein cited.

is the power exercised by so-called "spirit mediums" when they cause tables or other ponderable bodies to be levitated. I can only say to the skeptical that I *know* the power to exist, having for more than thirty years of my life pursued the investigation of so-called spiritistic phenomena, under the strictest test conditions, with two clearly defined objects in view, namely, first, to ascertain whether the alleged physical phenomena were really produced by supernatural means; and, secondly, for the purpose of trying to find the underlying principle which would correlate all psychic phenomena. Whether I have been successful in the latter quest, the readers of my published works must judge for themselves. But as to the first, I can only assure my readers that I have applied every possible scientific test to nearly every form of physical phenomena, especially to that of the levitation of ponderable bodies without physical contact or mechanical aids; and that as the result of my researches I am prepared to asseverate that the power exists in the subjective mind of man to cause inanimate matter to obey his will rather than the law of gravitation. The only wonder to my mind is that any one who cares to know the truth should deny the fact, since it is so easily ascertained to be true by any one who will consent to conduct a candid, unprejudiced investigation. The attitude of denial of the physical phenomena of spiritism is especially inexplicable, since not one of them possesses, in itself, any evidential value whatever for or against the doctrine that spirits of the dead communicate with the living. This is a logical truism that the world has been very slow to learn.

Believers in the verity of the New Testament records certainly have no right or occasion to doubt the existence of the power of levitation, since Jesus walked upon the water. If it is replied that he was exceptionally endowed, it must not be forgotten that Peter did the same thing. And the words of reproof addressed by the Master to Peter when he began to sink clearly indicated the source of the power. "O thou of little faith, wherefore didst thou doubt?" I submit that a volume of scientific dissertation could not have more clearly stated the fact that the power arose from the mental attitude of the individual, and not from any extraneous source, human or divine.

I have been thus insistent upon the recognition of this power in man, for the reason that, while it possesses no evidential value whatever in favor of the spiritistic hypothesis, it does constitute an important link in the chain of evidence going to prove the divine origin of man and his likeness to his Omnipotent Father. A word will make my meaning clear: —

This power, whether it emanates from spirits of the dead or spirits of the living, is clearly a spiritual or mental force or energy. It is an energy that moves and controls matter independently of physical organism; for it endows inert ponderable substances with apparent intelligence. That is to say, it not only causes ponderable bodies to move, but to answer questions intelligently by prescribed movements. It emanates, therefore, from some intelligence and is controlled by volition. That intelligence is the subjective mind of man. Embodied or disembodied, it is the mind of a human soul.

It is obvious that this power or energy corresponds to that infinite spiritual energy that assembled matter and created the material universe. In other words, that spiritual power, resident in the subjective mind of man, which is known to science as "telekinetic energy," enlarged and extended to infinity, without changing its essential nature, becomes omnipotence.

The next faculty on the list is that of telepathy, the power possessed by the subjective minds of men to communicate intelligence from one to another independently of the ordinary sensory channels of transmission.

Science has demonstrated the existence of this faculty in certain exceptionally developed persons known to scientists as "psychics." A psychic is a person who has developed the power to elevate the operations of his subjective mind above the threshold of normal consciousness. They are called by as many different names as there are theories of causation; "clairvoyants" and "spirit mediums" being among the most common designations. It is often developed spontaneously, without any known cause; and hypnotism is a powerful agency through which it may be experimentally demonstrated to exist. It was largely by this agency that the Society for Psychical Research conducted its investigations, although spontaneous cases are much in evidence in their reports. So-called "mediumship" is, however, the most prolific source of telepathic phenomena, although it is not recognized as such by the mediums themselves. A good "medium" is, nevertheless, simply a good telepathist; and it is to this power, exercised unconsciously and dominated by the law

of suggestion, that is due all that is mysterious in the so-called "communications from the other world." At least no alleged communication has ever yet been brought to light that cannot be thus accounted for. The same is true of all other methods of divination where the past, present, or future of an individual is accurately stated, without previous knowledge.

It will thus be seen that telepathy is a very important faculty of the human mind; for it explains more of that which is uncanny and mysterious in psychic phenomena than all other things combined. This, however, is the limit of its practical usefulness in this life; for the reason that, owing to the constantly modifying influence of the law of suggestion, it can never be relied upon as a practical means of communication.

It is in its implications that its importance is transcendent. The most important may be enumerated as follows:—

First, it gives us the logical right to believe that, since it performs no normal function in this life, it must be destined to a normal use in the future life. This implication is reinforced by the fact (a) that it is exactly adapted to the uses of disembodied souls; (b) that it is not adapted to incarnate souls, being only manifested under abnormal conditions; and (c) that a mental faculty without a normal function to perform *somewhere* is inconceivable.¹

Secondly, the fact that this or any other faculty is possessed by any one or more persons is demonstrative that all other persons possess the same fac-

¹ For a full discussion of this subject, see "A Scientific Demonstration of the Future Life."

ulty to a greater or less degree. It is at least latent in every human being.

Thirdly, it follows that it existed potentially in all the ancestry of man, near and remote.

We must therefore conclude that, since man traces his ancestry back to the divine mind, and since man was made in the image of God, the faculty which we are considering must exist, potentially at least, in the divine mind.

The stupendous consequences which this conclusion involves cannot be adequately considered in this connection. It is obvious, however, that here is the means by which man may reach the mind of God through prayer. Here is the means by which God may reach the souls of men who choose to open the line of communication by placing themselves in the proper mental attitude. Here is the agency of divine inspiration.

Does God answer the prayers of his children? Does God inspire men with a knowledge of his laws and a desire to do his will? These are great questions, which, for the present, each one must answer for himself, guided by the light of his own experience. It is outside the province of this volume to discuss them. I am simply trying to conduct an inductive inquiry with a view of ascertaining something of the general laws pertaining to the relationship which man sustains to his Maker. In this immediate connection I have shown that a law exists through which the divine consciousness may be reached; and it follows that the converse may also be true. In other words, potentially man is able to commune with God, and God with man, without violating or transcending natural law.

In the mean time there is another fact connected with the faculty of telepathy which is of more immediate importance than any we have considered; for in a sense it includes all the others. I refer to the fact that distance interposes no obstacle to the exercise of telepathic power. That is to say, it is apparently just as easy to communicate telepathically with a friend at the antipodes as with one in an adjoining room. The records of the London Society for Psychical Research show that some of the most remarkable cases of telepathic communion have been between persons thus widely separated. For the purposes of telepathic communion, therefore, space does not enter as an adverse factor. To all intents and purposes the agent is present with the percipient, and *vice versa*.

It is obvious that when this faculty or power or energy is enlarged and extended to infinity, it becomes the divine attribute of omnipresence.

We now approach the question that is of more vital importance to mankind than anything else pertaining to the relationship existent between God and his children. Thus far we have seen that the faculties of the subjective mind of man, enlarged to infinity, give us a conception of an omniscient, omnipotent, omnipresent deity. But those attributes alone do not satisfy the cravings of the human heart, nor are they commensurate with the unperverted intuitions of the human soul. Neither is a deity who has only those attributes the God of Christian faith; for that faith is founded upon the inerrant intuitions of the Man of Nazareth, and he proclaimed a God of infinite love, mercy, and benevolence. If therefore his per-

ceptions of divine truth were inerrant, and if the prophet of old failed not in his apprehension of ultimate verity when he declared that man was made in the image of God, we may confidently expect to find the soul of man to be correspondingly endowed. Accordingly we find that the natural emotions are located in the subjective mind.

Little further need be said on this branch of the subject beyond reminding the reader of what I pointed out in the earlier chapters of this book. It will be recalled that I showed that the so-called "animal passions," in their ultimate development, regulation, and purification, are all essentially altruistic. Beginning with the primordial instinct of reproduction, which in its ultimate analysis is the parental instinct, and tracing the history of the emotions up to their final development in the higher civilization, we find a constant tendency toward the higher altruism. Classifying the emotions into the "self-regarding" and the "other-regarding," we found that they all belong to the latter class except the one instinct of self-preservation; and that, as nations and peoples progress toward the higher civilization, the altruistic instincts and emotions assume the ascendancy. It necessarily follows that, if the analysis is correct, the ultimate goal of human progress is universal altruism.

That it is correct is abundantly evidenced by the history of human progressional development since man emerged from primitive savagery. Moreover, the present analysis shows that it is necessarily true, since man was made in the image of God.

It will now be seen that the chain of evidence to

prove our thesis is complete; for it is obvious that an extension of the natural emotions of man to infinity could amount to neither more nor less than infinite and universal love.

To sum up in a few words, we find in the subjective faculties of man, without a change in their essential nature, the embryotic representatives of all that the finite mind can conceive of the essential attributes of God,—the God of Christian faith. Thus:—

1. In the intellectual faculties (intuition, deduction, and memory), potential omniscience.
2. In its dynamic energy (telekinesis), potential omnipotence.
3. In the power of mental communion (telepathy), potential omnipresence.
4. In the natural emotions, potential universal altruism,—infinite love.

I submit that there can be no higher conception of divine knowledge — nay, that there can exist no higher wisdom, than that which is indicated in the word “omniscience;” that there can exist no greater power than is described in the word “omnipotence;” that there can be no broader conception of the all-pervasiveness of that wisdom and that power than is implied in the word “omnipresence;” and, finally, that the human mind can conceive of no quality or attribute of the divine personality of greater promise and potency than that implied in the words “infinite and universal love.”

Moreover, I submit that this is a conception of immanence without pantheism and personality without anthropomorphism. It does not presume either

to "limit" or "measure" the powers and attributes of God by setting up those of man as a standard of *measurement*. On the contrary, it simply shows that an analysis of the known powers of the human soul proves that the powers of God are illimitable, and hence immeasurable by finite minds. In other words, it is not that we can measure the powers of the divine mind or set up a standard of its limitations, but that we may know something of its essential *qualities* by an analysis of its emanations; just as we may, by spectrum analysis, know something of the qualities of light without presuming to reveal the extent or potency of solar influence.

This is all that man can know of God by a direct analysis of his own powers. But it is something. It is, indeed, much; for it is all that man needs to know concerning the character and attributes of the Great First Cause. Its value lies not more in its revelation of God to man than in its revelation of man to himself. It is not that it reveals human attributes in God, but that it discloses divine attributes in man, defines his place in nature, and reveals the character of his obligations to the Author of his being.

THE END.

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